5-3-62, Refiled Notice of Intention

FILE NOTATIONS

Entered in N I D File	✓	Checked by Chief	R L S
Entered On S R Sheet		Copy N I D to Field Office	
Location Map Pinned	✓	Approval Letter	[illegible]
Card Indexed	✓	Disapproval Letter	
I W R for State or Fee Land			

COMPLETION DATA:

Date Well Completed	7-5-62	Location Inspected	
OW X WW TA		Bond released State of Fee Land	
GW OS PA			

LOGS FILED

Driller's Log 8-8-62

Electric Logs (No.) 3

E I E-I ✓ GR GR-N ✓ Micro ✓

Lat Mi-L Sonic Others

FILE NOTATIONS

Entered in N I D File	✓	Checked by Chief	R L S
Entered On S R Sheet		Copy N I D to Field Office	✓
Location Map Pinned	✓	Approval Letter	✓
Card Indexed	✓	Disapproval Letter	
I W R for State or Fee Land			

COMPLETION DATA:

Date Well Completed	Location abandoned	Location Inspected	9-27-61
OW WW TA		Bond released State of Fee Land	
GW OS PA			

LOGS FILED

Driller's Log

Electric Logs (No.)

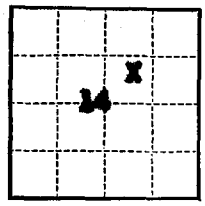
E I E-I GR GR-N Micro

Lat Mi-L Sonic Others

Copy to NSC

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

Form 9-331 b
(April 1952)



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Lands

Lease No. 14-20-603-247

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

June 21, 19 61

North Desert Creek
Well No. 32-14 is located 2130 ft. from {N/S} line and 1830 ft. from {E/W} line of sec. 14

SW NE 14 (¼ Sec. and Sec. No.) | 41S (Twp.) | R23E (Range) | SLBM (Meridian)

Ratherford (Field) | San Juan (County or Subdivision) | Utah (State or Territory)

The elevation [redacted] is 4691 ft. (Approx. Gr.)

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

1. Drill 17-1/4" hole to 80'±. Run and cement 80'± of 13-3/8" conductor pipe with 75 sacks of cement.
2. Drill 12-1/4" hole to 1340'±.
3. Cement 8-5/8" 32# J-55 casing at 1340'± with 400 sacks cement treated with 2% Calcium Chloride.
4. Drill 7-7/8" hole to 5430'± and drill 4-3/4" hole to 5560'± (TD) (Desert Creek Zone).
5. Cement 5-1/2", 15-1/2# J-55 casing at 5430'± with 200 sacks of cement.
6. Acidize open hole interval 5430 to 5560'± with 4400 gals. regular 15% HCL Acid.
7. Place well on production and establish initial rate.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address P. O. Box 1200

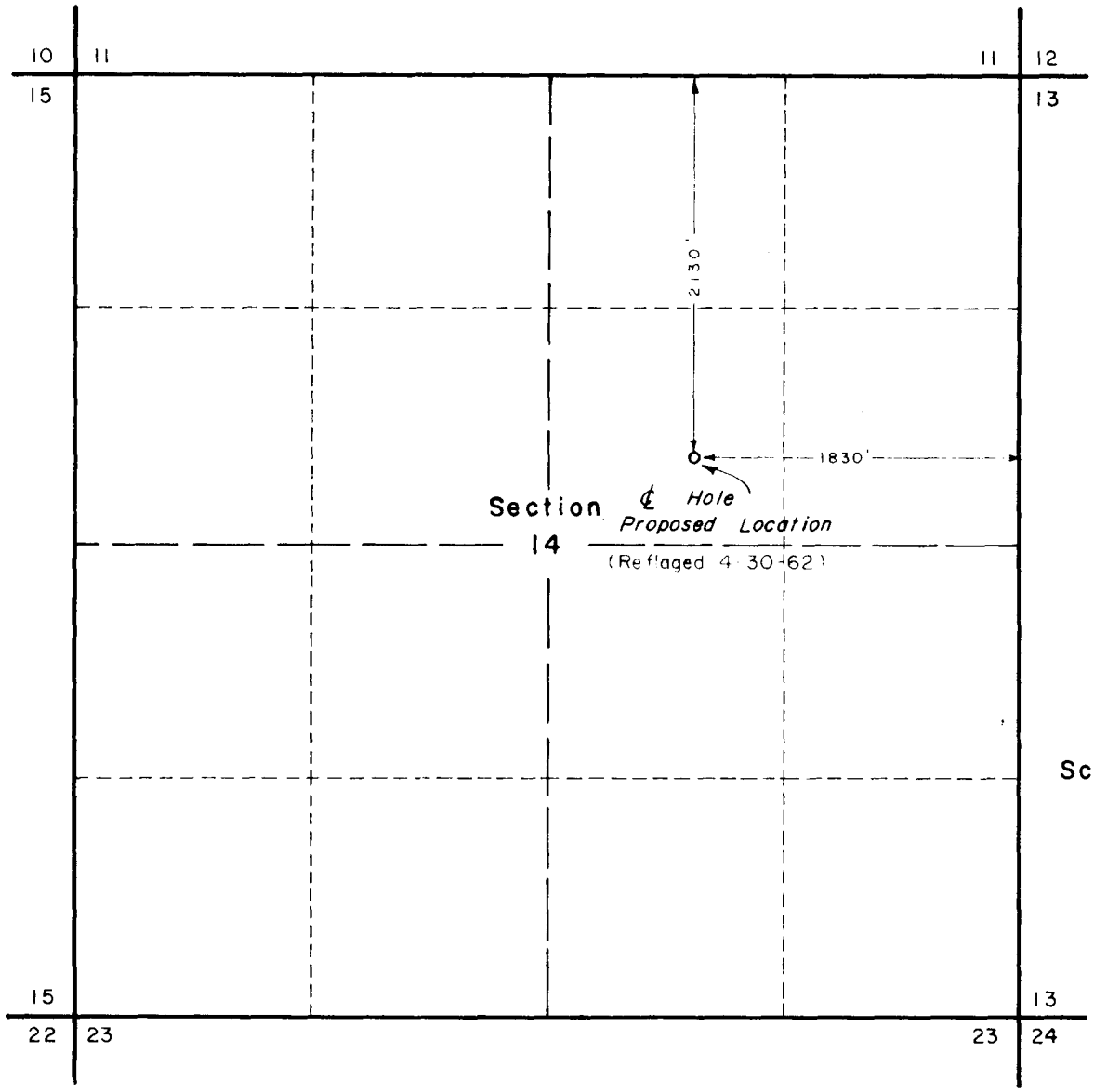
Farmington, N.M.

By Original Signed By W. M. MARSHALL
W. M. Marshall

Title Division Exploitation Engineer

16

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8



Scale: 1"= 1000'

WELL LOCATION: Shell Oil Company — 32-14

Located 2130 feet South of the North line and 1830 feet West of the East line of Section 14,
Township 41 South, Range 23 East, Salt Lake Base & Meridian.
San Juan Co., Utah
Existing ground elevation determined at 4591 feet based on Shell Oil Co. datum.

I hereby certify the above plat represents a survey made under my supervision and that it is accurate to the best of my knowledge and belief.

Edmund M. Clark

EDMUND M. CLARK
Registered Land Surveyor
State of Utah (No 2307)

Shell Oil Co., Farmington, N.M.	
WELL LOCATION PLAT SW 1/4-NE 1/4 Sec. 14, T41 S, R23E San Juan Co., Utah	
E.M. CLARK & ASSOC. Durango, Colorado	DATE: June 15, 62 FILE NO: Z20-1429

Completed 7-5-22

Accounted to

Item P-17

July 11, 1961

Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

Attn: W. M. Marshall, Div. Exploitation Eng.

Gentlemen:

This is to acknowledge receipt of your notice of intention to drill Well No. North Desert Creek 32-14, which is to be located 2130 feet from the north line and 1830 feet from the east line of Section 14, Township 41 South, Range 23 East, SLBM, San Juan County, Utah.

Please be advised that insofar as this office is concerned approval to drill said well is hereby granted in accordance with the Order issued in Cause No. 56, in a Hearing held on July 11, 1961.

This approval terminates within 90 days if the above mentioned well has not been spudded in within said period.

Very truly yours,

OIL & GAS CONSERVATION COMMISSION

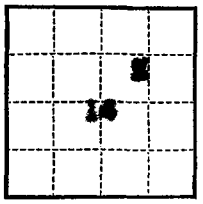
CLEON B. FEIGHT,
EXECUTIVE SECRETARY

CBF:awg
cc: P. T. McGrath, Dist. Eng.
U. S. Geological Survey

M. L. Coonts - OGCC, Moab

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Lands

Lease No. 14-20-603-247

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

May 2, 19 62

Well No. N.D.C. 32-14 is located 213 ft. from [N] line and 183 ft. from [E] line of sec. 14

SW NE 14 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) SLM (Meridian)

Retherford Unit (Field) San Juan (County or Subdivision) Utah (State or Territory)

Wildcat Field

The elevation of the derrick floor above sea level is 4591 ft. (Approx. Gr.)

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Proposed Work:

1. Drill 17-1/4" hole to 80'±. Run and cement 80'± of 13-3/8" conductor pipe with 175 sacks cement.
2. Drill 12-1/4" hole to 1340'±. Run and cement 8-5/8", 32# J-55 casing at 1340'± with 400 sacks cement.
3. Drill 7-7/8" hole to 5430'± and drill 4-3/4" hole to 5560'± (TD) (Desert Creek Zone).
4. Cement 5-1/2", 15.5#, J-55 casing at 5430'± with 200 sacks cement.
5. Acidize open hole interval 5430 to 5560± with 4000 gals. Regular 15% HCL Acid.
6. Place well on Production and establish Initial rate.

NOTE: Notice for this well was previously submitted and approved June 27, 1961.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address P. O. Box 1200

Farmington, N. M.

Original Signed By
W. M. MARSHALL

By W. M. Marshall

Division Exploitation Engineer

Title

3

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Lands

Lease No. 14-20-603-247

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	X
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

June 5, 1962

Well No. NDC 32-14 is located 2130 ft. from {N/S} line and 1830 ft. from {E/W} line of sec. 14

SW NE 14 (¼ Sec. and Sec. No.) | 41S (Twp.) | 23E (Range) | S.L.B.M. (Meridian)

Ratherford Unit (Field) | San Juan (County or Subdivision) | Utah (State or Territory)

The elevation of the kelly bushing above sea level is 4606.7 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spudded 5-31-62.

5-31 Ran and cemented 13-3/8" casing at 88' with 100 sacks cement plus 2% CaCl2. Good returns.

6-1 Ran and cemented 41 joints 8-5/8", 32 lb., J-55 casing at 1332' with 200 sacks 1.1 pozmix plus 200 sacks cement. Tested with 700 psi for 15 minutes. OK.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address Post Office Box 1200

Farmington, New Mexico

Original Signed By
W. M. MARSHALL

By W. M. Marshall

Title Division Exploitation Engineer

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8

Form 9-331 b
(April 1952)

Copy H.L.C.

(SUBMIT IN TRIPLICATE)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

Indian Agency Navajo

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Allottee Tribal Land

Lease No. 14-20-603-247

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	X
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			
		Completion Report	X

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 6, 1962

NDC
Well No. 32-14 is located 2130 ft. from {N/S} line and 1830 ft. from {E/W} line of sec. 14

SW, NE, 14 — (¼ Sec. and Sec. No.)
41S — (Twp.)
23E — (Range)
S.L.B.M. — (Meridian)

Ratherford Unit — (Field)
San Juan — (County or Subdivision)
Utah — (State or Territory)

The elevation of the ~~derrick floor~~ Kelly bushing above sea level is 4606.7 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Status: TD 5600', PBTD 5575; Csg. 13-3/8" at 87', 8-5/8" at 1332, 5-1/2" at 5594.
7-3-62 Perf. 5496-5511, 5515-30 with 4 holes/ft. Acidized with 6000 gals. 15% HCl. Breakdown press. 3200 psi. Avg. injection rate 5.5 BPM at 2400 psi.
7-4-62 Swabbed 200 bbls. acid water. Flowed for 45 min. and died. Running pump.
7-5-62 Finished running pump. On Production 5 P.M. No gauge.
7-6 & 7-7 Working on seperator.
7-8 & 7-16 Testing.

Representative Initial Production.
Pumping 242 B/D oil, 0.4% cut, 312 MCF/D gas, GOR 1290.
Completed 7-5-62.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address Post Office Box 1200

Farmington, New Mexico

Original signed by
By B. W. SHEPARD
For H. D. English
Title Division Exploitation Engineer

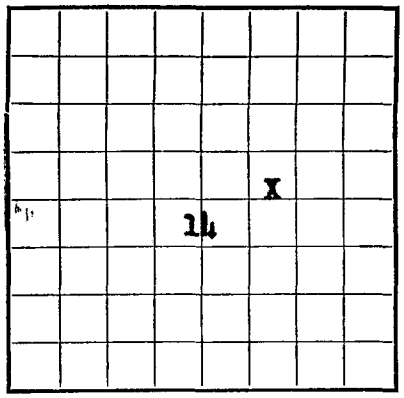
9

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8

Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. LAND OFFICE Navajo Tribal Lands
SERIAL NUMBER 14-20-603-247
LEASE OR PERMIT TO PROSPECT



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Shell Oil Company Address P.O. Box 1200, Farmington, N. M.

Lessor or Tract Navajo Field Ratherford State Utah

Well No. NDC 32-14 Sec. 14 T. 41S R. 23E Meridian S.L.B.M. County San Juan

Location 2130 ft. {N./S.} of N Line and 1830 ft. {E./W.} of E Line of Sec. 14 Elevation 4606.7 KB (Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Original signed by B. W. SHEPARD
For H. D. English Title Division Exploitation Engineer

Date August 6, 1962

The summary on this page is for the condition of the well at above date.

Commenced drilling 5-31, 1962 Finished drilling 6-30, 19 62

OIL OR GAS SANDS OR ZONES

(*Denote gas by G*)

No. 1, from 5496 to 5511 No. 4, from ____ to ____

No. 2, from 5515 to 5530 No. 5, from ____ to ____

No. 3, from ____ to ____ No. 6, from ____ to ____

IMPORTANT WATER SANDS

No. 1, from ____ to ____ No. 3, from ____ to ____

No. 2, from ____ to ____ No. 4, from ____ to ____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
13-3/8	33			3 jts.					Conductor
8-5/8	32		J-55	4 jts.					Surface
5-1/2	15			5594'					Production

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
13-3/8	87	100	Displacement		
8-5/8	1332	400	Displacement		
5-1/2	5594	200	Displacement		

PLUGS AND ADAPTERS

Heaving plug—Material ____ Length ____ Depth set ____

Adapters—Material ____ Size ____

FOLD | MARK

Casing						
13-3/8	87	100	Displacement			
8-5/8	1332	400	Displacement			
5-1/2	5594	200	Displacement			

FOLD | MARK

PLUGS AND ADAPTERS

Heaving plug—Material ____ Length ____ Depth set ____

Adapters—Material ____ Size ____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 5500 feet, and from ____ feet to ____ feet

Cable tools were used from ____ feet to ____ feet, and from ____ feet to ____ feet

DATES

July 5, 1962, 19____ Put to producing ____, 19____

The production for the first 24 hours was 242 barrels of fluid of which 99.6 % was oil; ____% emulsion; 0.4 % water; and ____% sediment. Gravity, °Bé. ____

If gas well, cu. ft. per 24 hours ____ Gallons gasoline per 1,000 cu. ft. of gas ____

Rock pressure, lbs. per sq. in. ____

EMPLOYEES

B. L. Northern, Driller Great Western Drilling Company, Driller

G. A. Raye, Driller ____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
2050	2190	140	Shinarump
2190	2298	108	Moenkopi
2298	4263	1965	Cutler
4263	5466	1203	Hermosa
5466	-		Paradox

See attached Drilling History.

[OVER]

16—43094-4

Temp

M-1720-P 4-59

[illegible] SAMPLES

Examined by R.E. Dorsey to
5300 to 5450

Well North Desert Crk. 32-14
Field or Area Ratherford

From	To	%	Shows Underlined	Samples Not Lagged
[illegible]	5300	20	Limestone, light tan-light tannish gray and light brown, I-VF-A, appears sandy in part with fine clastic(?) calcite grains, in part fossiliferous (fragments of brachiopods and bryozoans), 5% total sample fluorescence with no cut, 20% moderate-strong pale yellowish white cut fluorescence, 40% faint pale yellowish white cut fluorescence, 40% no cut fluorescence.	
		15	Chert, brown greenish brown.	
		15	Siltstone, medium dark gray, micaceous, firm, very slightly calcareous, argillaceous.	
		10	Shale, medium [illegible] gray and black, silty in part.	
			Limestone as above, shows as above.	
			Chert, as above.	
		40	Shale, as above.	
[illegible]	5350	70	Limestone, white-light tan and light brown, occasionally II-VF-A, I-VF-A with B_{Tr}, occasionally sandy with fine subrounded calcite grains, slightly fossiliferous: fragments of brachiopods, fusulinids, crinoid buttons, trace sample fluorescence, [illegible] cut fluorescence.	
			[illegible], milky bluish white, medium-dark brown, grayish white.	
		10	Siltstone, as above.	
		5	Shale, as above.	
[illegible]	[illegible]	0	Limestone, as above.	
		05	Chert, as above.	
		35	Siltstone, as above.	
		55	Shale, as above.	
[illegible]	[illegible]	[illegible]	Limestone, as above.	
			[illegible], as above.	
		05	Siltstone, as above.	
		10	Shale, dark brown, very calcareous, varies to an argillaceous limestone.	
		85	Shale, medium-dark gray, as above.	
[illegible]	[illegible]	20	Limestone, white-light tan, very soft-moderately soft, I-II-VF-F-A with occasional recrystallized areas of III-F-A, 5+% sample fluorescence, no cut, cut fluorescence pale yellow white, 20% medium cut fluorescence, 40% faint fluorescence.	
		20	Siltstone, as above.	
		25	Shale, as above, medium-dark gray.	

3

M-1720-P 4-59

DRILL SAMPLES

Examined by R.E.Dorsey 5450 to 5520
_____ _____ to _____

Well North Deserk Crk. 32-14
Field or Area Recapture

From	To	%	Shows Underlined	Samples/Not Lagged
5450	5470	65	Limestone, white-light tan, occasionally light-medium brown, often soft, I-III-VF-F-A with B_{Tr}, occasional fossil fragments: brachiopods and fusulinids with one bryozoa fragment, 10% medium yellow white sample fluorescence, no cut, 30% medium pale yellow white cut fluorescence, 50% faint pale yellow white cut fluorescence, with faint-medium fluorescent streamers.	
		15	Siltstone, as above.	
		20	Shale, as above.	
5470	5485	10	Limestone, as above, shows as above.	
		15	Siltstone, as above.	
		75	Shale, dark gray-black, silty, slightly-moderately calcareous (P-50).	
		[illegible]	Shale, medium-dark gray, as above.	
5485	5490	5	Limestone, light gray, light-medium brown, I-III-VF-F-A, darker limestone is in part dolomitic, 5% medium yellow white sample fluorescence, no cut, 20% medium yellow white cut fluorescence, 30% faint yellow white cut fluorescence.	
		30	Siltstone, as above.	
		30	Shale, dark gray-black, as above.	
		35	Shale, medium-dark gray, as above.	
5490	5504	10	Limestone, medium brown with light brown mottling, I-III-VF-F-A + B_5 + O_{Tr}, 5-10% medium yellow sample fluorescence, 20% faint brownish cut, 20% bright yellow white cut fluorescence, 20% medium yellow white cut fluorescence, 30% faint yellow white cut fluorescence. All with moderate to faint fluor.streamers.	
		30	Siltstone, as above.	
		25	Shale, dark gray-black, as above.	
		35	Shale, medium-dark gray, as above.	
5504	5520	50	Limy Dolomite-Dolomitic Limestone, light-medium brown with dark brown mottling, I-III-VF-F-A + B_2, approximately 5-10% anhydrite filling, occasional suggestion of unidentified fossil fragments; 5504-10 20% medium-bright yellow-yellowish white sample fluorescence; 5510-20 30% medium-bright yellow-yellowish white sample fluorescence; 5504-20 no cut, 60% bright yellowish white cut fluorescence, 30% medium yellowish white cut fluorescence.	
		< 5	Chert, light-medium brown with occasional milky white and translucent patches.	
		10	Dolomite, medium-dark brownish gray, I-VF-F-A + BT_r, no shows.	
		15	Siltstone, as above.	
		20	Shale, medium-dark gray, as above.	
		75	Shale, black, silty, as above.	

M-1720-P 4-59

SAMPLES

Examined by R.E.Dorsey 5520 to 5577

_____ to _____

Well North Desert Crk. 32-14

Field or Area Recapture

From	To	%	Shows Underlined	Samples/Not Lagged
5520	5530	40	Limy Dolomite-Dolomitic Limestone, as above, 10% medium-bright yellow sample fluorescence, no cut, 30% bright yellowish white cut fluorescence, 30% medium yellowish white cut fluorescence, 20% faint yellowish white cut fluorescence, all with moderate-faint fluorescent streamers.	
		<5	Chert, as above.	
		20	Dolomite, as above, no shows.	
		10	Limestone, white-light tan, I-II-VF-A, no shows.	
		10	Siltstone, as above.	
		15	Shale, medium-dark gray, as above.	
5530	5540	50	Limy Dolomite-Dolomitic Limestone, as above, 10% medium-bright yellow sample fluorescence, no cut, 30% bright yellowish white cut fluorescence, 30% medium yellowish white cut fluorescence, 30% faint yellowish white cut fluorescence.	
		Tr	Chert, as above.	
		20	Dolomite, as above, no shows.	
		10	Limestone, white, III-F-A + B_{Tr}, no shows.	
		10	Siltstone, as above.	
		10	Shale, as above.	
5540	5570	40	Limy Dolomite-Dolomitic Limestone, as above, trace interstitial black dead(?) oil staining, 10% medium-bright yellow-yellowish white sample fluorescence, trace faint brown cut, 50% bright yellowish white cut fluorescence, 20% medium yellowish white cut fluorescence, 20% faint yellowish white cut fluorescence.	
		Tr	Chert, as above.	
		10	Dolomite, as above, no shows.	
		20	Dolomite, light gray, I-III-VF-F-A-B_{Tr}, no shows.	
		Tr	Limestone, white, as above, no shows.	
		10	Siltstone, as above.	
		20	Shale, as above.	
5570	5577	10	Limy Dolomite-Dolomitic Limestone, as above, 2% medium-bright yellow-yellowish white sample fluorescence, no cut, 30% bright yellowish white sample fluorescence, 20% medium yellowish white sample fluorescence, 10% faint yellowish white sample fluorescence.	
		Tr	Chert, as above.	
		15	Dolomite, medium-dark brownish gray, as above, no shows.	
		50	Limestone, light grayish tan, I-VF-F-A and I-III-VF-F-A, no shows.	
		10	Siltstone, as above.	
		15	Shale, as above.	

5

M-1720-P 4-59

SAMPLES

Examined by R.E.Dorsey 5577 to 5600
_____ to ____

Well North Desert Crk. 32-14
Field or Area Recapture

From	To	%	Shows Underlined	Samples Not Lagged
5577	5590	85	Limestone, light grayish tan, as above, no shows.	
		Tr	Anhydrite, white-translucent, finely crystalline.	
		5	Limy Dolomite-Dolomitic Limestone, as above, cavings, shows as above.	
		[illegible]	Siltstone, as above.	
		5	Shale, medium-dark gray, as above.	
5590	5600	65	Limestone, as above.	
		[illegible]	Anhydrite, as above.	
		[illegible]	Limy Dolomite, medium brown with light tan-white patches (fossil fragments?), I-III-VF-F-A + B_{Tr}, no shows.	
		[illegible]	Siltstone as above.	
		[illegible]	Shale, as above.	
		Tr	Chert, as above.	
[illegible]	Circ.	60	Limestone, as above.	
	[illegible]	Tr	Anhydrite, as above.	
		25	Limy Dolomite, medium brown with light tan-white patches as above.	
		5	Siltstone, as above.	
		[illegible]	Shale, as above.	
		[illegible]	Chert.	

6

Temp

FD 4A 2-60 PRINTED IN U.S.A. 9-58
Preprint *M 1718-P 5-59

SHELL OIL COMPANY

DRILLING REPORT
FOR PERIOD ENDING

June 29, 1962

North Desert Creek
WELL NO. 32-14

Ratherford
(FIELD)

San Juan, Utah
(COUNTY)

14
(SECTION OR LEASE)

T. 41 S., R. 23 E., SLBM
(TOWNSHIP OR RANCHO)

DAY 1962	DEPTHS FROM	DEPTHS TO	REMARKS
			Location: 2130' FNL and 1830' FEL Section 14, T. 41 S., R. 23 E., S.L.B.M., San Juan County, Utah.
			Elevation: KB 4606.7; DF 4605.2; GG 4594.6
[illegible]	[illegible]	95	Drilled 95' of 12-1/4" hole. Reamed to 17-1/4". Ran 3 joints 13-3/8" 33 lb. casing. Cemented at 87' with 100 sacks cement plus 2% $CaCl_2$. Good returns.
[illegible]	95	1335	Drilled 1240' of 12-1/2" hole. Ran 41 joints 8-5/8", 32 lb., J-55 ST&C Casing. Cemented at 1332' with 200 sacks 1.1 Pozmix plus 200 sacks cement treated with 2% $CaCl_2$.
[illegible]	[illegible]		Drilled 4156' of 7-7/8" hole. Reduced hole to 4-3/4".
		5491	
	[illegible]		Drilled 86' of 4-3/4" hole. Started logging. Logs stopped at 5491'. Would not go down. Pulled out. Made two trips to clean out and condition mud.
		5577	
	[illegible]		Trying to log. Unable to get logs past 5491'.
	[illegible]		Still unable to log. Going in hole with 7-7/8" bit to ream 4-3/4" hole to 7-7/8".
[illegible]	5577	5596	Reaming and drilling 4-3/4" to 7-7/8".
[illegible]	5596	5600 TD	Drilled 4'. Circulated for logs. Started out, pipe stuck at 5565'. Spotted 100 barrels oil. Worked pipe loose.
[illegible] TD			Ran IES, GRN and ML logs. Conditioned hole to run casing.
[illegible] TD			Ran 5-1/2", 15 lb. casing and cemented at 5594' with 200 sacks cement. Killed annulus water flow with 250 sacks of H Diamix cement plus 3% $CaCl_2$.

CONDITION AT BEGINNING OF PERIOD			
[illegible]	FROM	TO	CASING SIZE / DEPTH SET
[illegible]			

[illegible]

SIGNED

PD 3A 2-50 PRINTED IN U. S. A. 8-56
Preprint *M 1718-P 5-59

SHELL OIL COMPANY

North Desert Creek
WELL NO. 32-14

DRILLING REPORT
FOR PERIOD ENDING

Retherford
(FIELD)

San Juan, Utah
(COUNTY)

July 16, 1962

14
(SECTION OR LEASE)

T. 41 S., R. 23 E., SLBM
(TOWNSHIP OR RANCHO)

DAY 1962	DEPTHS FROM	DEPTHS TO	REMARKS
6/30	5575 PBTD		Drilled out cement to 5575' with 2-3/8" tubing. Released rig 10:00 A.M.
7/2	5575 PBTD		Moving in completion rig.
7/3			Pulled tubing. Ran GR Collar log. Perforated 5496-5511', 5515-30' with 4 holes/foot. Ran 2-1/2" tubing to 5526'. Acidized with 6,000 gallons inhibited 15% HCl. Breakdown pressure 3200 psi. Average injection rate 5.5 BPM at 2400 psi. Final pressure 200 psi. On vacuum in minutes. Shut in overnight.
			Pumped 200 barrels acid water and load. Flowed for 45 minutes and died. Running pump.
7/5			Continued running pump. On production 5:00 P.M. No gauge.
			Pumped 7 barrels/hour rate. Not cut. Revising facilities to effect better oil and gas separation.
			Measured gas flow from separator. Pumping, no gauge.
7/8			Testing. I.P. 242 B/D oil, 0.4% cut, 312 MCF/D, 1290 GOR.

CONDITION AT END OF PERIOD

HOLE SIZE	FROM	TO	CASING SIZE	DEPTH SET
17-1/2	0	95	13-3/8	87
12-1/4	95	1335	8-5/8	1332
7-7/8	1335	5600	5-1/2	5594

Drilling Contractor Great Western
Contractor Drlg. Foreman R. W. Hall
Company Foreman C. L. Christiansen

SIGNED

PHILLIPS PETROLEUM COMPANY

P. O. Drawer 1150
Cortez, Colorado

November 1, 1962

Utah Oil & Gas Conservation Commission
310 Newhouse Building
Salt Lake City 11, Utah

Dear Sirs:

This is to advise that Phillips Petroleum Company took over operations of the following oil wells at 7:00 A.M. November 1, 1962, as an additional portion of the Ratherford Unit Participating Area.

Company	Lease and Well No.	Location - San Juan County, Utah
W. A. Moncrief	Navajo E-2	SW/4, NE/4, Sec. 4-41S-24E
Shell Oil Co.	North Desert Creek No. 32-14	SW/4, NE/4, Sec. 14-41S-24E

No oil or gas sales have been made from W. A. Moncrief's Navajo E-2 Well. It was proven productive in test tank after acidizing and shut in pending approval of being taken into the Unit.

Oil and gas sales have been made to Four Corners Pipeline Company and El Paso Natural Gas Company through the Ratherford Unit from Shell Oil Company's North Desert Creek Well No. 32-14.

In accord with the present well numbering system of the Ratherford Unit, the above wells will be re-numbered as follows:

Old Lease and Well No.	New Lease and Well No.
W. A. Moncrief Navajo E-2	Ratherford Unit No. 4-32
Shell Oil Company North Desert Creek No. 32-14	Ratherford Unit No. 14-32

Yours very truly,
PHILLIPS PETROLEUM COMPANY

C. M. Boles
District Superintendent

HGC:bh

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
P. O. Box 2920 Casper, Wyoming 82601

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2130' FNL and 1830' FEL (SW NE)

5. LEASE DESIGNATION AND SERIAL NO.
14-20-603-247

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo Tribal

7. UNIT AGREEMENT NAME
SW - 1-4192

8. FARM OR LEASE NAME
Rutherford Unit

9. WELL NO.
14-32

10. FIELD AND POOL, OR WILDCAT
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 14-41S-23E, SLBM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
4607 RKB

12. COUNTY OR PARISH
San Juan Co.

13. STATE
Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT		MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE	X	ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other)			
(Other)							

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Perforate lower Zone I 5536-39 and 5544-52 GR-N (5530-33 and 5538-46 GR Collar Log). Perforate lower Ismay 5427-37 and 5457-66 GR-N (5421-31 and 5451-60 GR Collar Log). Acidize w/ BP and Pkr. as follows: (1) New Zone I above, 5000 gals. 15% in two stages - (2) Present Zone I 5496-5530 GR-N (5490-5524 GR Collar Log), 10,500 gal. 15% in three stages - (3) Lower Ismay above, 7000 gals. 15% in two stages. Return to commingled production.

Present Production: 58 BOPD, 1 BWPD, 34 MCF GPD

18. I hereby certify that the foregoing is true and correct

SIGNED H. M. Morgan P. C. Morgan TITLE **Production Superintendent** DATE **April 18, 1974**

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

3 - USGS - Farmington, NM
2 - Utah O&G CC, Salt Lake City, Utah
1 - File

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Phillips Petroleum Company

3. ADDRESS OF OPERATOR: P. O. Box 2920, Casper, Wyoming 82601

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2130' FNL & 1830' FEL

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-355

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME: SW-I-4192

8. FARM OR LEASE NAME: Rutherford Unit

9. WELL NO.: 14-32

10. FIELD AND POOL, OR WILDCAT: Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14-T41S-R23E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): RKB 4607'

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[X]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

SEE ATTACHED

18. I hereby certify that the foregoing is true and correct

SIGNED F. C. Morgan TITLE Production Superintendent DATE July 24, 1974

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

3 - USGS, Farmington, New Mexico
2 - Utah O&G CC, Salt Lake City, Utah
1 - Denver
1 - Superior, Cortez, Colorado
1 - File

*See Instructions on Reverse Side

1 - B'Ville E&P
1 - Denver E&P
1 - R. N. Hughes
1 - G. R. Hudson
1 - File

NAL REPORT-[illegible]DUAL WELL S[illegible]US

Lease Ratherford Unit Well No. 14-32 Authorization No. AFE P-9631

Summary of Work Performed:

Perforate Lower Zone I and Lower Ismay. Acidize with 22,500 gals 15% HCL.

AVERAGE DAILY PRODUCTION

	Field and Formation	Oil	Gas	Water
Before Work	Aneth - Desert Creek	40	27	0
After Work	Aneth - Desert Creek & Ismay	27	NR	3
Before Work				
After Work				

DATE P.T.D.

1974

June 1-3

RATHERFORD UNIT NO. 14-32 FIRST REPORT. PTD 5575. PREP TO ACIDIZE. 6/1/74 MI AND RU R AND R WS UNIT 5/31/74. PP, LOWERED TBG, CHECKED PBTD AT 5579 FT., COOH W/TBG. 6/2/74 RU SCHLUMBERGER, PERF. 5421-31, 5451-60, 5530-33, AND 5538-46 W/ 2 HOLES PER FOOT, HYPER JET II CSG. GUN. RAN TBG. W/BAKER PET. BP, COLLAR LOCATOR, TBG. TSTR, AND TRTG. PKR WITH 35 FT. TAIL PIPE BELOW PKR. SET BP ON BOTTOM AT 5575 FT. SCHL. MEAS. SDON. 6/3/74 SD OVER SUNDAY. AFE P-9631 TO PERF. LOWER ZONE I AND LOWER ISMAY, ACIDIZE W/22,500 GALS. 15 PERCENT, RETURN TO PROD. LOCATION 2130 FT. FNL, 1830 FT. FEL, SEC. 14-T41S-R23E, SAN JUAN CO., UTAH. LAST DAY PRODUCED 5/30/ /74. LAST WELL TEST 2/17/74 PMPD 40 BO, 27 MCFG, AND 0 BW IN 24 HRS. 14-74-1-3/4 IN..

4

RATHERFORD UNIT NO. 14-32 PTD 5575. PREP TO SELECTIVELY ACID. 5421-31 W/3000 GALS. AND SWB TEST. RU DOWELL, SET PKR AT 5527 FT. COMMUNICATED BETWEEN INTERVALS 5530-33 AND 5509-24, RESET PKR AT 5470, LOADED ANNULUS, PMPD 33 BO DN TBG. TO CHK FOR COMM. - OK. STARTED ACID DN TBG AT 5 BPM AT 3400 LB, ANNULUS COMMUNICATED W/ 3000 GALS. ACID IN, COMM. BETWEEN INTERVALS 5490-5505 AND 5451-60. SHUT DN PMPS, RAISED PKR. TO 5363 FT., TAIL PIPE AT 5400 FT. PMPD 50 BSW DN ANNULUS TO CLEAR ACID ABOVE PKR, SET PKR. AT 5363 FT., ACIDIZED PERFS. 5421-31, 5451-60, 5490-5505, 5509-24, 5530-33, AND 5538-46 MCCULLOCH GR-CCL MEAS. W/16,000 GALS. ACID IN 4 STAGES W/ OIL FLUSH BEHIND EACH STAGE AS FOLLOWS: 400 GALS. OIL W/800 LB. BLOCKING AGENT, 250 GALS. OIL SPACER, 4000 GALS. ACID, 8 BPM AT 3000 LB. 3000 GALS. OIL FLUSH, 6.8 BPM, 3300 LB. 400 GALS. OIL W/800 LB. BLOCKING AGENT, 250 GALS. OIL SPACER, 4000 GALS. ACID, 5 BPM, 3500 LB., 3000 GALS. OIL FLUSH 5.8 BPM, 3500 LB. 600 GALS. OIL W/1200 LB. BLOCKING AGENT, 250 GALS. SPACER 4000 GALS. ACID, 4.5 BPM, 3300 LB. 3000 GALS. OIL FLUSH, 5 BPM, 3400 LB. 640 GALS. OIL WITH 1280 LB. BLOCK AGENT 250 GALS. SPACER 4000 GALS. ACID, 3.8 BPM, 3400 LB, 4000 GALS, OIL, 5.4 BPM 3450 LB, NO ACTION ON PLUGS. AIR 5.4 BPM, 3400 PSI, ISIP 2800 LB., 6 MIN. SIP 0 LB. LOAD TO REC: 438 BLO, 603 BAW AND SW. /NOTE: PERFS ON YESTERDAYS REPORT WERE MCCULLOCH GR-CCL MEASUREMENTS WHICH ARE EQUIVALENT TO SCHLUMBERGER GR-N OPEN HOLE LOG AS FOLLOWS: 5427-37, 5457-66, 5536-39, AND 5544-52 FT. - /MCCULLOCH GR-CCL 5500 EQUALS SCHLUMBERGER GR-N 5506/..

July 24, 1974
Date Prepared

H G Hudson
District Approval

Form 903 8-69

DAILY REPORT DETAILED

LEASE Ratherford Unit WELL NO. 14-32 SHEET NO. 2

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
JUNE 5		RATHERFORD UNIT NO. 14-32 PTD 5575. PREP TO RUN PMPG. EQUIP. SET BP AT 5441, PKR AT 5410, ACID. PERFS. 5421-31 W/3500 GALS. DOWELL 15 PERCENT, COULDN/T PMP INTO FORM., SPTD. ACID ON PERFS, PRESS. TO 3500 LB. PRESS DROPPED TO 0 LB. IN 30 SECONDS, APPARENTLY COMMUNICATED. CAUGHT UP WITH ACID AND GRADUALLY GAINED TO 1900 LB. MAX. PRESS. ISIP 1400 LB. ON VACUUM IN 3 MINUTES. AIP 4.1 BPM. AIP 1500 LB. STARTED SWBG., REC. 1/2 BO EACH RUN, RIGGED DOWN SWBG. EQUIP, COOH W/BP AND PKR..
6		RATHERFORD UNIT NO. 14-32 PTD 5575. PMPG. - NO GAUGE. RAN 2 7/8 IN. OD TBG AND RODS, POP. REL. P AND P WS UNIT 6/5/74. 552 BLO, 687 BLA AND SW TO PEC..
7		RATHERFORD UNIT NO. 14-32 PTD 5575. PMPG - NO GAUGE..
8-10		RATHERFORD UNIT NO. 14-32 PTD 5575. 6-8 PMPD 24 HRS. NO PRODUCTION. 6-9 UNABLE TO GET WELL TO PMP. PULLED RODS AND TBG. SDON. 6-10 SD OVER SUNDAY..
11		RATHERFORD UNIT NO. 14-32 PTD 5575. RAN TBG. AND RODS, PMPD 6 HRS, 17 BO, 0 BW..
12		RATHERFORD UNIT NO. 14-32 PTD 5575. PREP TO INCREASE PMP SPEED. PMPD 24 HRS. 38 BLO, 0 BW..
13		RATHERFORD UNIT NO. 14-32 PTD 5575. PMPD 21 HRS. 31 BLO, 0 BW. DOWN 3 HRS SPEEDING UP UNIT TO 12-44 SPM..
14		RATHERFORD UNIT NO. 14-32 PTD 5575. PMPD 24 HRS. 38 BLO, 0 BW. TEMP DROP UNTIL LOAD OIL REC..
July 24		RATHERFORD UNIT NO. 14-32 PTD 5575. TEMP DROPPED FROM 6/14/74 REPORT. LOAD REC. PMPD 24 HRS. 27 BO AND 3 BW. LOC/ 2130 FT. FNL AND 1830 FT. FEL SEC. 14/T41S/R23E, SAN JUAN CO., UTAH. SUB AREA CODE 626. FINAL REPORT..

OIL & GAS CONSERVATION COMMISSION

(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: 96-004192 ✓

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

1. OIL WELL [XX] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME: Ratherford Unit ✓

2. NAME OF OPERATOR: Phillips Oil Company

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: P. O. Box 2920, Casper, WY 82602

9. WELL NO.:

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: See Attached

10. FIELD AND POOL, OR WILDCAT: N/A

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: See Attached

14. PERMIT NO.: See Attached

15. ELEVATIONS (Show whether DF, RT, GR, etc.):

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

16. Check Appropnate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

To show change of Operator only. Phillips Oil Company assumed operations effective December 1, 1983 from Phillips Petroleum Company. See attached for list of wells.

14-32 100

RECEIVED
DEC - 8 1983

Org.& 3-BLM
1-The Navajo Nation
1-Mary Wiley Black
1-Lawrence E. Brock
1-Cheveron USA
1-Ralph Faxel
1-Royal Hogan
1-W. O. Keller
1-Dee Kelly Corp.
1-Robert Klabzuba
1-Micheal J. Moncrief
1-Richard B. Moncrief
1-Lee W. Moncrief
1-Mary H. Morgan
1-W. A. Moncrief
1-W. A. Moncrief, Jr.
1-L. F. Peterson
1-Shell Oil Co.
1-Southland Royalty Co.
1-Superior Oil Co.
1-Leroy Shave
1-Texaco, Inc.
1-Wade Wiley, Jr.
1-Edwin W. Word, Jr.
1-File

18. I hereby certify that the foregoing is true and correct

SIGNED A. E. Stuart TITLE Area Manager DATE 12/6/83

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

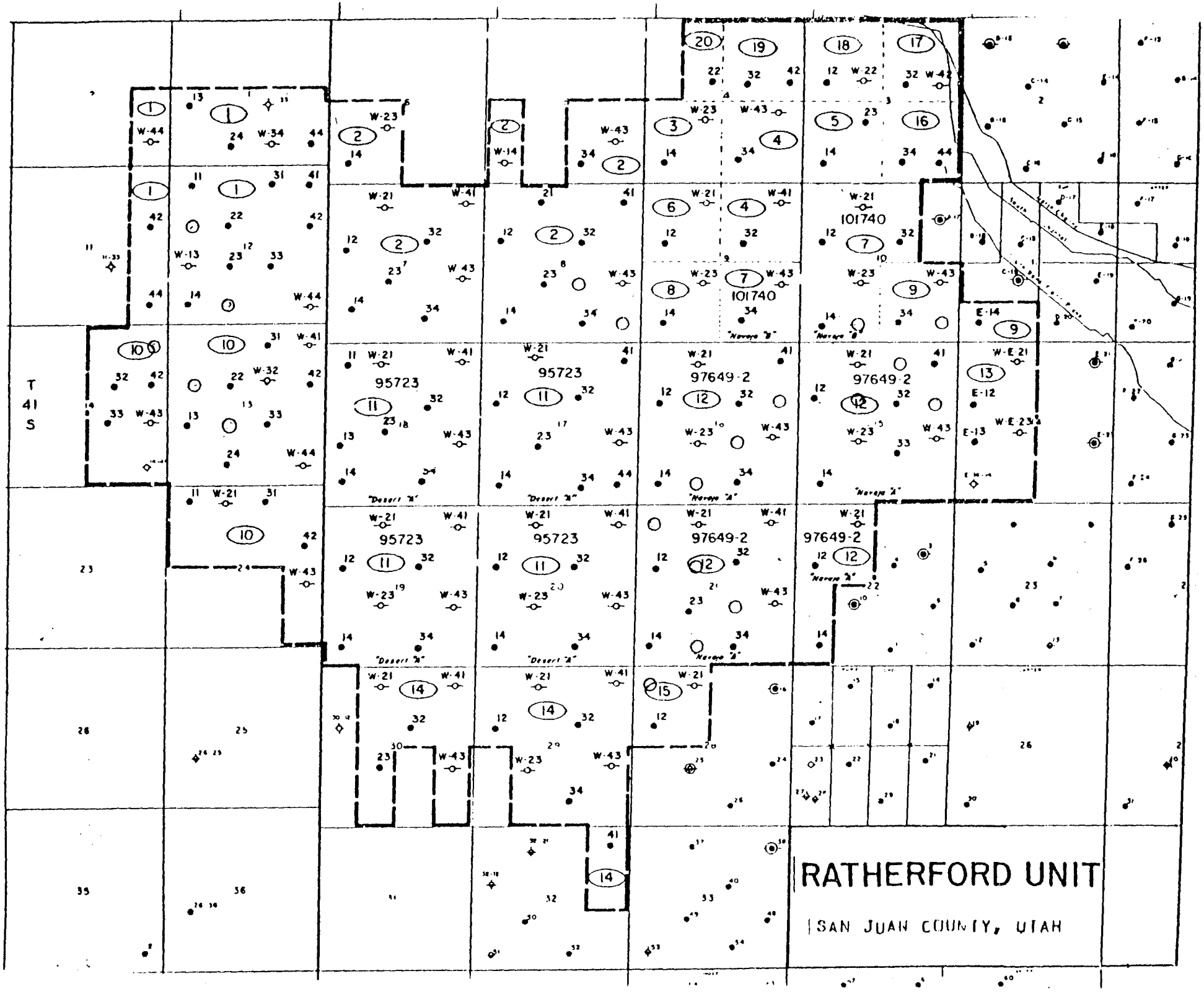
*See Instructions on Reverse Side

WELL NO.	WELL LOCATION	API NO.	STATUS
29-34	SW SE Sec.29-T41S-R24E	43-037-15340	Act.
30-23	NE SW Sec.30-T41S-R24E	43-037-15341	SI
30-32	SW NE Sec.30-T41S-R24E	43-037-15342	SI
32-41	NE NE Sec.32-T41S-R24E	43-037-15344	SI
1-13	NW SW Sec.1-T41S-R24E	43-037-15838	Act.
1-24	SE SW Sec.1-T41S-R24E	43-037-15839	Act.
1-44	SE SE Sec.1-T41S-R24E	43-037-15840	Act.
6-14	SW SW Sec.6-T41S-R24E	43-037-15894	Act.
7-12	SW NW Sec.7-T41S-R24E	43-037-15985	SI
7-14	SW SW Sec.7-T41S-R24E	43-037-15986	SI
7-23	NE SW Sec.7-T41S-R24E	43-037-15987	SI
7-32	SW NE Sec.7-T41S-R24E	43-037-15988	SI
7-34	SW SE Sec.7-T41S-R24E	43-037-15989	Act.
11-42	SE NE Sec.11-T41S-R23E	43-037-15841	Act.
11-44	SE SE Sec.11-T41S-R23E	43-037-15842	Act.
12-11	NW NW Sec.12-T41S-R23E	43-037-15843	Act.
12-14	SW SW Sec.12-T41S-R23E	43-037-15844	Act.
12-22	SE NW Sec.12-T41S-R23E	43-037-15845	Act.
12-23	NE SW Sec.12-T41S-R23E	43-037-15846	Act.
12-31	NW NE Sec.12-T41S-R23E	43-037-15847	Act.
12-33	NW SE Sec.12-T41S-R23E	43-037-15848	Act.
12-41	NE NE Sec.12-T41S-R23E	43-037-15849	Act.
12-42	SE NE Sec.12-T41S-R23E	43-037-15850	Act.
13-13	NW SW Sec.13-T41S-R23E	43-037-15851	Act.
13-22	SE NW Sec.13-T41S-R23E	43-037-15852	Act.
13-24	SE SW Sec.13-T41S-R23E	43-037-15853	Act.
13-31	NW NE Sec.13-T41S-R23E	43-037-15854	Act.
13-33	NW SE Sec.13-T41S-R23E	43-037-15855	Act.
13-42	SE NE Sec.13-T41S-R23E	43-037-15857	Act.
14-32	SW NE Sec.14-T41S-R23E	43-037-15858	Act.
14-33	NW SE Sec.14-T41S-R23E	43-037-15859	SI
14-42	SE NE Sec.14-T41S-R23E	43-037-15860	Act.
24-11	NW NW Sec.24-T41S-R23E	43-037-15861	SI
24-31	NW NE Sec.24-T41S-R23E	43-037-15862	Act.
E11-14	SW SW Sec.11-T41S-R24E	43-037-16167	Act.
3-12	SW NW Sec.3-T41S-R24E	43-037-15620	Act.
3-14	SW SW Sec.3-T41S-R24E	43-037-15124	Act.
3-23	NE SW Sec.3-T41S-R24E	43-037-15125	SI
3-32	SW NE Sec.3-T41S-R24E	43-037-15621	SI
3-44	SE SE Sec.3-T41S-R24E	43-037-15031	Act.
4-14	SW SW Sec.4-T41S-R24E	43-037-16163	Act.
4-22	SE NW Sec.4-T41S-R24E	43-037-15622	SI
4-32	SW NE Sec.4-T41S-R24E	43-037-15623	SI
4-34	SW SE Sec.4-T41S-R24E	43-037-16164	Act.
4-42	SE NE Sec.4-T41S-R24E	43-037-15624	SI
5-34	SW SE Sec.5-T41S-R24E	43-037-15983	SI
8-12	SW NW Sec.8-T41S-R24E	43-037-15991	Act.
8-14	SW SW Sec.8-T41S-R24E	43-037-15992	Act.
8-21	NE NW Sec.8-T41S-R24E	43-037-15993	Act.
8-23	NE SW Sec.8-T41S-R24E	43-037-15994	Act.
8-32	SW NE Sec.8-T41S-R24E	43-037-15995	SI

6. UNIT OPERATOR (Well operator)

Phillips Petroleum Company is hereby designated as Unit Operator and by signature hereto as Unit Operator agrees and consents to accept the duties of Unit Operator for the development and production of Unitized Substances as herein provided.

Taken from the Ratherford Unit Agreement.
Operator Name Change.


T
41
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95723
97649-2
101740
"Desert A"
"Navajo A"
RATHERFORD UNIT
SAN JUAN COUNTY, UTAH

2

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

P J KONKEL
PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON NM 87401

RECEIVED
AUG 16 1993
DIVISION OF
OIL, GAS & MINING

UTAH ACCOUNT NUMBER: N0772

REPORT PERIOD (MONTH/YEAR): 6 / 93

AMENDED REPORT ☐ (Highlight Changes)

Well Name / API Number	Entity	Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
#21-23 4303713754	06280	41S 24E 21	DSCR	POW	29	1374	883	58
#3-44 4303715031	06280	41S 24E 3	DSCR	POW	30	111	94	2905
#3-14 4303715124	06280	41S 24E 3	DSCR	POW	30	67	23	302
#9-12 4303715126	06280	41S 24E 9	DSCR	POW	30	112	654	17363
#9-14 4303715127	06280	41S 24E 9	DSCR	POW	30	201	315	423
#28-12 4303715336	06280	41S 24E 28	PRDX	POW	29	112	47	2428
#29-12 4303715337	06280	41S 24E 29	PRDX	POW	29	56	0	672
#29-32 4303715339	06280	41S 24E 29	DSCR	POW	29	1402	287	2224
#29-34 4303715340	06280	41S 24E 29	DSCR	POW	29	757	48	0
#30-32 4303715342	06280	41S 24E 30	DSCR	POW	29	588	1049	3744
#3-12 4303715620	06280	41S 24E 3	DSCR	POW	30	268	11	363
#9-34 4303715711	06280	41S 24E 9	DSCR	POW	30	45	46	9800
#10-12 4303715712	06280	41S 24E 10	DSCR	POW	30	45	23	1088
					TOTALS	5138	3480	41370

COMMENTS: Effective July 1, 1993, Phillips Petroleum Company has sold its interest in the Ratherford Unit to Mobil Exploration and Producing U.S., Incorporated, P. O. Box 633, Midland, Texas 79702. Mobil assumed operations on July 1, 1993.

I hereby certify that this report is true and complete to the best of my knowledge. Date: 8/11/93

Name and Signature: PAT KONKEL Pat Konkel Telephone Number: 505 599-3452

(6/93)

FORM 11

STATE OF UTAH
/ISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS DISPOSITION REPORT

OPERATOR NAME AND ADDRESS:

LB Sheffield
~~BRIAN BERRY~~
~~M E P N A~~ MOBIL
~~POB 219031 1807A RENTWR~~ P.O. DRAWER G
DALLAS TX 75221-9031 CORTEZ, CO. 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 7 / 93

AMENDED REPORT ☐ **(Highlight Changes)**

*93100 updated. fee

ENTITY NUMBER	PRODUCT	GRAVITY BTU	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS TRANSPORTED	DISPOSITIONS USED ON SITE	DISPOSITIONS FLARED/VENTED	DISPOSITIONS OTHER	ENDING INVENTORY
05980	OIL			177609	177609	0			
	GAS			72101	66216	5885			
11174	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
TOTALS				249710	243825	5885			

RECEIVED
SEP 13 1993
DIVISION OF
OIL, GAS & MINING

COMMENTS: PLEASE NOTE ADDRESS CHANGE. MOBIL ~~A&GO~~ PRODUCTION REPORTS WILL BE COMPILED AND SENT FROM THE CORTEZ, CO. OFFICE IN THE FUTURE.

I hereby certify that this report is true and complete to the best of my knowledge.

Date: 9/6/93

Name and Signature: Lowell B Sheffield

Telephone Number: ~~303 565~~ 2212 ~~244 658 2528~~

(6/93)

FORM=NR0003.FRM 07/2

FORM 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION & SERIAL NO.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

1. OIL WELL ☐ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

2. NAME OF OPERATOR: MOBIL OIL CORPORATION

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: P. O. BOX 633 MIDLAND, TX 79702

9. WELL NO.:

RECEIVED
SEP 15 1993
DIVISION OF
OIL, GAS & MINING

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
At surface

At proposed prod. zone

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

14. API NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY	13. STATE
		SAN JUAN	UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OPERATOR			
(Other)				(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			
APPROX. DATE WORK WILL START				DATE OF COMPLETION			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

* Must be accompanied by a cement verification report.

AS OF JULY1, 1993, MOBIL OIL CORPORATION IS THE OPERATOR OF THE RATHERFORD UNIT. ATTACHED ARE THE INDIVIDUAL WELLS.

18. I hereby certify that the foregoing is true and correct

SIGNED Shirley Todd TITLE ENV. & REG TECHNICIAN DATE 9-8-93

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

See Instructions On Reverse Side

(3/89)

12W-44	43-037-16405	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 660 FSL; 660 FEL
12W-44A	43-037-31543	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 807 FEL; 772 FSL
13-11W	43-037-31152	14-20-603-247A	SEC. 13, T41S, R23E	NW/NW 500 FNL; 660 FWL
13-12	43-037-31127	14-20-603-247A	SEC. 13, T41S, R23E	SW/NW 1705 FNL; 640 FWL
13W-13	43-037-15851	14-20-603-247A	SEC. 13, T41S, R23E	NW/SW 1980 FSL; 4620 FEL
13-14	43-037-31589	14-20-603-247A	SEC. 13, T41S, R23E	660 FSL; 660 FWL
13-21	43-037-31128	14-20-603-247A	SEC. 13, T41S, R23E	NE/NW 660 FNL; 1920 FWL
13W-22	43-037-15852	14-20-603-247A	SEC. 13, T41S, R23E	SE/NW 1988 FNL; 3300 FEL
13-23	43-037-31129	14-20-603-247A	SEC. 13, T41S, R23E	NE/SW 1980 FSL; 1930 FWL
~~13W-44~~	~~43-037-15853~~	~~14-20-603-247~~	~~SEC. 13, T41S, R23E~~	~~600 FSL; 3300 FEL~~
13W-32	43-037-16406	14-20-603-247A	SEC. 13, T41S, R23E	1881 FNL; 1979 FEL
13W-33	43-037-15855	14-20-603-247A	SEC. 13, T41S, R23E	NW/SE 1970 FSL; 1979 FEL
13W-34	43-037-31130	14-20-603-247A	SEC. 13, T41S, R23E	SW/SE 660 FSL; 1980 FEL
13-41	43-037-15856	14-20-603-247A	SEC. 13, T41S, R23E	NE/NE 660 FNL; 660 FEL
13W-42	43-037-15857	14-20-603-247A	SEC. 13, T41S, R23E	SE/NE 2139; 585 FEL
13-43	43-037-31131	14-20-603-247A	SEC. 13, T41S, R23E	NE/SE 1700 FSL; 960 FEL
13W-44	43-037-16407	14-20-603-247A	SEC. 13, T41S, R23E	SE/SE 635 FSL; 659 FEL
~~14-03~~	~~NA~~	~~14-20-603-4037~~	~~SEC. 11, T41S, R23E~~	~~SW/SW 660 FSL; 660 FEL~~
14-32	43-037-15858	14-20-603-247A	SEC. 14, T41S, R23E	2130 FNL; 1830 FEL
14-41	43-037-31623	14-20-603-247A	SEC. 14, T41S, R23E	NE/NE 521 FEL; 810 FNL
14W-42	43-037-15860	14-20-603-247A	SEC. 14, T41S, R23E	SE/NE 1976 FNL; 653 FEL
14W-43	43-037-16410	14-20-603-247A	SEC. 14, T41S, R23E	3300 FSL; 4770 FEL
14-33	43-037-15859	14-20-603-247	SEC. 14, T41S, R23E	2130 FSL; 1830 FEL
15-12	43-037-15715	14-20-603-355	SEC. 15, T41S, R24E	1820 FNL; 500 FWL
15W-21	43-037-16411	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 1820 FWL
15-22	43-037-30449	14-20-603-355	SEC. 15, T41S, R24E	SE/NW, 1980 FNL; 2050 FWL
15-32	43-037-15717	14-20-603-355A	SEC. 15, T41S, R24E	1980 FNL; 1980 FEL
15-33	43-037-15718	14-20-603-355	SEC. 15, T41S, R24E	NW/SE 1650 FSL; 1980 FEL
15-41	43-037-15719	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 660' FEL
15-42	43-037-30448	14-20-603-355	SEC. 15, T41S, R24E	SE/NE 2020 FNL; 820 FEL
16W-12	43-037-15720	14-20-603-355	SEC. 16, T41S, R24E	SW/NW 1880 FNL; 660 FWL
16-13	43-037-31168	14-20-603-355	SEC. 16, T41S, R24E	1980 FSL; 660 FWL
16W-14	43-037-15721	14-20-603-355	SEC. 16, T41S, R24E	SW/SW 660 FSL; 660 FWL
16W-21	43-037-16414	14-20-603-355	SEC. 16, T41S, R24E	NE/NW 660 FNL; 1880 FWL
16W-23	43-037-15722	14-20-603-355	SEC. 16, T41S, R24E	NE/SW 1980 FSL; 1980 FWL
16-32	43-037-15723	14-20-603-355	SEC. 16, T41S, R24E	1980 FNL; 1980' FEL
16-34	43-037-15724	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 1980' FEL
16-41	43-037-15725	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 660 FEL
16W-43	43-037-16415	14-20-603-355	SEC. 16, T41S, R24E	NE/SE 2140 FSL; 820 FEL
17-11	43-037-31169	14-20-603-353	SEC. 17, T41S, R24E	NW/NW 1075' FNL; 800' FWL
17W-12	43-037-15726	14-20-603-353	SEC. 17, T41S, R24E	SW/NW 1980' FNL; 510' FWL
17-13	43-037-31133	14-20-603-353	SEC. 17, T41S, R24E	NW/SW 2100' FSL; 660' FWL
17W-14	43-037-15727	14-20-603-353	SEC. 17, T41S, R24E	SW/SW 660' FSL; 660' FWL
17W-21	43-037-16416	14-20-603-353	SEC. 17, T41S, R24E	510' FNL; 1830' FWL
17-22	43-037-31170	14-20-603-353	SEC. 17, T41S, R24E	1980' FNL; 1980' FWL
17W-23	43-037-15728	14-20-603-353	SEC. 17, T41S, R24E	NE/SW 1980' FWL; 1880' FSL
17-31	43-037-31178	14-20-603-353	SEC. 17, T41S, R24E	NW/NE 500' FNL; 1980' FEL
17-32W	43-037-15729	14-20-603-353	SEC. 17, T41S, R24E	SW/NE 1830' FNL; 2030' FEL
17-33	43-037-31134	14-20-603-353	SEC. 17, T41S, R24E	NW/SE 1980' FSL; 1845' FEL
17-34W	43-037-15730	14-20-603-353	SEC. 17, T41S, R24E	SW/SE 560' FSL; 1880' FEL
17W-41	43-037-15731	14-20-603-353	SEC. 17, T41S, R24E	610' FNL; 510' FEL
17-42	43-037-31177	14-20-603-353	SEC. 17, T41S, R24E	SE/NE 1980; FNL, 660' FEL
17-44	43-037-15732	14-20-603-353	SEC. 17, T41S, R24E	660 FSL; 660' FEL
17W-43	43-037-16417	14-20-603-353	SEC. 17, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-11	43-037-15733	14-20-603-353	SEC. 18, T41S, R24E	NW/NW 720' FNL; 730' FWL
18-12W	43-037-31153	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 1980' FNL; 560' FWL
18W-21	43-037-16418	14-20-603-353	SEC. 18, T41S, R24E	NE/NW 660' FNL; 1882' FWL
18-22	43-037-31236	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 2200' FNL; 2210' FWL
18W-23	43-037-30244	14-20-603-353	SEC. 18, T41S, R24E	NE/SW 2385' FSL; 2040' FWL
18W-14	43-037-15735	14-20-603-353	SEC. 18, T41S, R24E	SW/SW 810' FSL; 600' FWL
18-24	43-037-31079	14-20-603-353	SEC. 18, T41S, R24E	SE/SW 760' FSL; 1980' FWL
18-31	43-037-31181	14-20-603-353	SEC. 18, T41S, R24E	NW/NE 795' FNL; 2090; FEL
~~18W-32~~	~~43-037-15736~~	~~14-20-603-353~~	~~SEC. 18, T41S, R24E~~	~~SW/NE 2140' FNL; 1830' FEL~~
18-33	43-037-31135	14-20-603-353	SEC. 18, T41S, R24E	NW/SE 1870' FSL; 1980' FEL
18-34W	43-037-15737	14-20-603-353	SEC. 18, T41S, R24E	SW/SE 780' FSL; 1860 FEL
18W-41	43-037-15738	14-20-603-353	SEC. 18, T41S, R24E	NE/NE 660' FNL; 660' FEL
18-42	43-037-31182	14-20-603-353	SEC. 18, T41S, R24E	SE/NE 2120' FNL; 745' FEL
18W-43	43-037-16419	14-20-603-353	SEC. 18, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-44	43-037-31045	14-20-603-353	SEC. 18, T41S, R24E	SE/SE 660' FSL; 660' FEL
19-11	43-037-31080	14-20-603-353	SEC. 19, T41S, R24E	NW/NW 660' FNL; 660' FWL
19-12	43-037-15739	14-20-603-353	SEC. 19, T41S, R24E	600' FWL; 1980' FNL
19-14	43-037-15740	14-20-603-353	SEC. 19, T41S, R24E	600' FSL; 660' FEL

PA'd

PA'd

Sept 29, 1993

TO: Lisha Cordova - Utah Mining Oil & Gas

FROM: Janice Easley
BLM Farmington, NM
505 599-6355

Here is Copy of Rutherford Unit Successor Operator.

4 pages including this one.

Ltr: Ratherford Unit (GC)

Navajo Area Office
P. O. Box 1060
Gallup, New Mexico 87305-1060

ARES/543

JUL 26 1993

Mr. G. D. Cox
Mobil Exploration and
Producing North America, Inc.
P. O. Box 633
Midland, Texas 79702

Dear Mr. Cox:

Enclosed for your information and use is the approved Designation of Operator between the Phillips Petroleum Company and Mobil Exploration and Producing North America, Inc. for the Ratherford Unit.

Please note that all other concerned parties will be furnished their copy of the approved document.

Sincerely,

ACTING Area Director

Enclosure

cc: Bureau of Land Management, Farmington District Office w/enc.
TNN, Director, Minerals Department w/enc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

DESIGNATION OF OPERATOR

Phillips Petroleum Company is, on the records of the Bureau of Indian Affairs, operator of the Ratherford Unit,

AREA OFFICE: Window Rock, Arizona
LEASE NO: Attached hereto as Exhibit "A"

and, pursuant to the terms of the Ratherford Unit Agreement, is resigning as Unit Operator effective July 1, 1993, and hereby designates

NAME: Mobil Exploration and Producing North America Inc., duly elected pursuant to the terms of the Ratherford Unit Agreement,

ADDRESS: P. O. Box 633, Midland, Texas 79702
Attn: G. D. Cox

as Operator and local agent, with full authority to act on behalf of the Ratherford Unit lessees in complying with the terms of all leases and regulations applicable thereto and on whom the authorized officer may serve written or oral instructions in securing compliance with the Operating Regulations (43 CFR 3160 and 25 CFR 211 and 212) with respect to (described acreage to which this designation is applicable):

Attached hereto as Exhibit "A"

Bond coverage under 25 CFR 211, 212 or 225 for lease activities conducted by the above named designated operator is under Bond Number 05202782 (attach copy). Evidence of bonding is required prior to the commencement of operations.

It is understood that this designation of operator does not relieve any lessee of responsibility for compliance with the terms of the leases and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the leases.

In case of default on the part of the designated operator, the lessees will make full and prompt compliance with all regulations, lease terms, stipulations, or orders of the Secretary of the Interior or his representative.

Attached is the appropriate documentation relevant to this document.

The designated operator agrees to promptly notify the authorized officer of any change in the operatorship of said Ratherford Unit.

Phillips Petroleum Company

June 17, 1993

By: M. B. [illegible] J.
Attorney-in-Fact

Mobil Exploration and Producing
North America Inc.

June 11, 1993

By: B. D. Martiny
Attorney-in-Fact B.D. MARTINY

ACTING AREA DIRECTOR 7/9/93
APPROVED BY TITLE DATE

APPROVED PURSUANT, TO SECRETARIAL REDELEGATION ORDER 209 DM 8 AND 230 DM 3.

This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.

EXHIBIT "A"

ATTACHED TO AND MADE A PART OF DESIGNATION OF SUCCESSOR OPERATOR, RATHERFORD UNIT

EXHIBIT "C"

Revised as of September 29, 1992)
SCHEDULE OF TRACT PERCENTAGE PARTICIPATION

Tract Number	Description of Land	Serial Number and Effective Date of Lease	Tract Percentage Participation
1	S/2 Sec. 1, E/2 SE/4 Sec. 2, E/4 Sec. 11, and all of Sec. 12, T-41-S, R-23-E, S.L.M. San Juan County, Utah	14-20-603-246-A Oct. 5, 1953	11.0652565
2	SE/4 and W/2 SW/4 Sec. 5, the irregular SW/4 Sec. 6, and all of Sec. 7 and 8, T-41-S, R-24-E, San Juan County, Utah	14-20-603-368 Oct. 26, 1953	14.4159942
3	SW/4 of Sec. 4, T-41-S, R-24-E, San Juan County, Utah	14-20-603-5446 Sept. 1, 1959	.5763826
4	SE/4 Sec. 4, and NE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4035 March 3, 1958	1.2587779
5	SW/4 of Sec. 3, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5445 Sept. 3, 1959	.4667669
6	NW/4 of Sec. 9, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5045 Feb. 4, 1959	1.0187043
7	NW/4, W/2 NE/4, and SW/4 Sec. 10, SE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4043 Feb. 18, 1958	3.5097575
8	SW/4 Sec. 9, T-41-S, R-24-E, S.L.M. San Juan County, Utah	14-20-603-5046 Feb. 4, 1959	1.1141679
9	SE/4 Sec. 10 and S/2 SW/4 Sec. 11 T-41-S, R-24-E, San Juan County, Utah	14-20-603-4037 Feb. 14, 1958	2.6186804
10	All of Sec. 13, E/2 Sec. 14, and E/2 SE/4 and N/2 Sec. 24, T-41-S, R-23-E, S.L.M., San Juan County, Utah	14-20-603-247-A Oct. 5, 1953	10.3108861
11	Sections 17, 18, 19 and 20, T-41-S, R-24-E, San Juan County Utah	14-20-603-353 Oct. 27, 1953	27.3389265
12	Sections 15, 16, 21, and NW/4, and W/2 SW/4 Sec. 22, T-41-S, R-24-E, San Juan County, Utah	14-20-603-355 Oct. 27, 1953	14.2819339
13	W/2 Section 14, T-41-S, R-24-E, San Juan County, Utah	14-20-603-370 Oct. 26,1953	1.8500847
14	N/2 and SE/4, and E/2 SW/4 Sec. 29, NE/4 and E/2 SE/4 and E/2 W/2 irregular Sec. 30, and E/2 NE/4 Sec. 32, T-41-S, R-24-E, San Juan County, Utah	14-20-603-407 Dec. 10, 1953	6.9924969
15	NW/4 Sec. 28, T-41-S, R24-E San Juan County, Utah	14-20-603-409 Dec. 10, 1953	.9416393
16	SE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6504 July 11, 1961	.5750254
17	NE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6505 July 11, 1961	.5449292
18	NW/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6506 July 11, 1961	.5482788
19	NE/4 Sec. 4, T-41-S, R24-E San Juan County, Utah	14-20-0603-7171 June 11, 1962	.4720628
20	E/2 NW/4 Sec. 4, T-41-S, R-24-E San Juan County, Utah	14-20-0603-7172 June 11, 1962	.0992482
100% Indian Lands		TOTAL 12,909.74	100.0000000

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[] Well File _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[] Suspense

(Return Date) _____

(To - Initials) _____

[XX] Other

OPERATOR CHANGE

_____

_____

1. Date of Phone Call: 10-6-93 Time: 9:30

2. DOGM Employee (name) L. CORDOVA (Initiated Call [XX])

Talked to:

Name GLEN COX (Initiated Call []) - Phone No. (915)688-2114

of (Company/Organization) MOBIL

3. Topic of Conversation: OPERATOR CHANGE FROM PHILLIPS TO MOBIL "RATHERFORD UNIT".

(NEED TO CONFIRM HOW OPERATOR WANTS THE WELLS SET UP - MEPNA AS PER BIA APPROVAL

OR MOBIL OIL CORPORATION AS PER SUNDRY DATED 9-8-93?)

4. Highlights of Conversation:

MR. COX CONFIRMED THAT THE WELLS SHOULD BE SET UNDER ACCOUNT N7370/MEPNA AS PER BIA APPROVAL, ALSO CONFIRMED THAT PRODUCTION & DISPOSITION REPORTS WILL NOW BE HANDLED OUT OF THEIR CORTEZ OFFICE RATHER THAN DALLAS.

MEPNA-

PO DRAWER G

CORTEZ, CO 81321

(303)565-2212

*ADDRESS CHANGE AFFECTS ALL WELLS CURRENTLY OPERATORED BY MEPNA, CURRENTLY REPORTED OUT OF DALLAS (MCELMO CREEK).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:

1-LEC/07-SJ	
2-DTS/S8-FILE	
3-VLC	
4-RJF/	
5-LEC	
6-PL	

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XX Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator ☐ Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 7-1-93)

TO (new operator) MEPNA
(address) PO DRAWER G
CORTEZ, CO 81321
GLEN COX (915)688-2114
phone (303) 565-2212
account no. N7370

FROM (former operator) PHILLIPS PETROLEUM COMPANY
(address) 5525 HWY 64 NBU 3004
FARMINGTON, NM 87401
PAT KONKEL
phone (505) 599-3452
account no. N0772(A)

Well(s) (attach additional page if needed): *RATHERFORD UNIT (NAVAJO)

Name: **SEE ATTACHED**	API: 43037158 58	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

Lec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Req. 8-20-93) (6/93 Prod. Rpt. 8-16-93)

Lec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Req. 8-31-93) (Rec'd 9-14-93)

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

Lec 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (O&G wells 10-6-93) (wiw's 10-26-93)

Lec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (wiw's 10-26-93)

Lec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (wiw's 10-26-93)

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (10-6-93)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

- OVER -

PERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Yes 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

Yes/N/A 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

__ 2. A copy of this form has been placed in the new and former operators' bond files.

__ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.

DTS 11-10-93

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: 11-17 19 93.

FILING

Yes 1. Copies of all attachments to this form have been filed in each well file.

Yes 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

931006 BIA/Bhm Approved 7-9-93.

OE71/34-35

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
355 West North Temple, 3 Triad, Suite 350, Salt Lake City, UT 84180-1203

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

C/O MOBIL OIL CORP
M E P N A
PO DRAWER G
CORTEZ CO 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 6 / 95

AMENDED REPORT ☐ **(Highlight Changes)**

Well Name / API Number	Entity	Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
#12-14 4303715844	06280	41S 23E 12	PRDX					
#12-23 4303715846	06280	41S 23E 12	PRDX					
#12-41 4303715849	06280	41S 23E 12	DSCR					
RATHERFORD 13-41 4303715856	06280	41S 23E 13	DSCR					
14-32 4303715858	06280	41S 23E 14	IS-DC					
#5-34 4303715983	06280	41S 24E 5	IS-DC					
-12 4303715991	06280	41S 24E 8	DSCR					
#8-21 4303715993	06280	41S 24E 8	DSCR					
#8-23 4303715994	06280	41S 24E 8	IS-DC					
#8-32 4303715995	06280	41S 24E 8	PRDX					
#8-34 4303715996	06280	41S 24E 8	PRDX					
#8-41 4303715997	06280	41S 24E 8	PRDX					
#E14-12 4303715998	06280	41S 24E 14	IS-DC					
					TOTALS			

COMMENTS: _____

I hereby certify that this report is true and complete to the best of my knowledge. Date: _____

Name and Signature: _____ Telephone Number: _____

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[ ] Well File _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[ ] Suspense

(Return Date) _____

(To - Initials) _____

[XXX] Other

OPER NM CHG

_____

_____

1. Date of Phone Call: 8-3-95 Time: _____

2. DOGM Employee (name) L. CORDOVA (Initiated Call [ ])

Talked to:

Name R. J. FIRTH (Initiated Call [XX]) - Phone No. ( )

of (Company/Organization) _____

3. Topic of Conversation: M E P N A / N7370

4. Highlights of Conversation:

OPERATOR NAME IS BEING CHANGED FROM M E P N A (MOBIL EXPLORATION AND PRODUCING NORTH AMERICA INC) TO MOBIL EXPLOR & PROD. THE NAME CHANGE IS BEING DONE AT THIS TIME TO ALLEVIATE CONFUSION, BOTH IN HOUSE AND AMONGST THE GENERAL PUBLIC.

*SUPERIOR OIL COMPANY MERGED INTO M E P N A 4-24-86 (SEE ATTACHED).

Mobil Oil Corporation

P.O. BOX 5444
DENVER, COLORADO 80217-5444

May 14, 1986

Utah Board of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: R. J. Firth
Associate Director

SUPERIOR OIL COMPANY MERGER

Dear Mr. Firth:
On September 20, 1984, The Superior Oil Company (Superior) became a wholly owned subsidiary of Mobil Corporation. Since January 1, 1985, Mobil Oil Corporation (MOC), another wholly owned subsidiary of Mobil Corporation, has acted as agent for Superior and has operated the Superior-owned properties.

On April 24, 1986, Superior was merged with Mobil Exploration and Producing North America Inc. (MEPNA), which is also a wholly owned subsidiary of Mobil Corporation. MEPNA is the surviving company of the merger.

This letter is to advise you that all properties held in the name of Superior will now be held in the name of MEPNA; and that these properties will continue to be operated by MOC as agent for MEPNA.

Attached is a listing of all wells and a separate listing of injection-disposal wells, Designation of Agent and an organization chart illustrating the relationships of the various companies. If you have any questions or require additional documentation of this merger, please feel free to contact me at the above address or (303) 298-2577.

Very truly yours,

R. D. Baker
Environmental Regulatory Manager

CNE/rd
CNE8661

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:
1-LEC 7-PL
2-LWP 8-SJ
3-~~DTS~~ 9-FILE
4-VLC
5-RJF
6-LWP

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

☐ Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator XXX Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: **8-2-95**)

TO (new operator) **MOBIL EXPLOR & PROD**	FROM (former operator) **M E P N A**
(address) **C/O MOBIL OIL CORP**	(address) **C/O MOBIL OIL CORP**
PO DRAWER G	**PO DRAWER G**
CORTEZ CO 81321	**CORTEZ CO 81321**
phone (303) **564-5212**	phone (303)**564-5212**
account no. N7370	account no. **N7370**

Well(s) (attach additional page if needed):

Name: **** SEE ATTACHED ****	API: 037-15858	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

N/A 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form).

N/A 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

N/A 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (8-3-95)

LWP 6. Cardex file has been updated for each well listed above. 8-31-95

LWP 7. Well file labels have been updated for each well listed above. 9-28-95

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (8-3-95)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

OPERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ___ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only) * No Fee Lease Wells at this time!

N/A/Lec 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

___ 2. A copy of this form has been placed in the new and former operators' bond files.

___ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
UTS
FS

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: October 6 19 95.

FILING

___ 1. Copies of all attachments to this form have been filed in each well file.

___ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

950803 UIC F5/Not necessary!

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 14-32
9. API Well No.: 43-037-15858
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACT
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2130' FNL & 1830' FEL SEC.14, T41S, R23E

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other SIDETRACT	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

BOTTOM HOLE LOCATION
LATERAL #1: 1149' NORTH & 964' EAST FROM SURFACE SPOT (ZONE 1a)
LATERAL #2: 1893' SOUTH & 2703' EAST FROM SURFACE SPOT (ZONE 1b/1d)
LATERAL #3: 2333' SOUTH & 2333' EAST FROM SURFACE SPOT (ZONE 1a)

SEE ATTACHED PROCEDURE.

RECEIVED
APR 15 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Shaleen Krachus Title ENV. & REG. TECHNICIAN Date 04-09-97

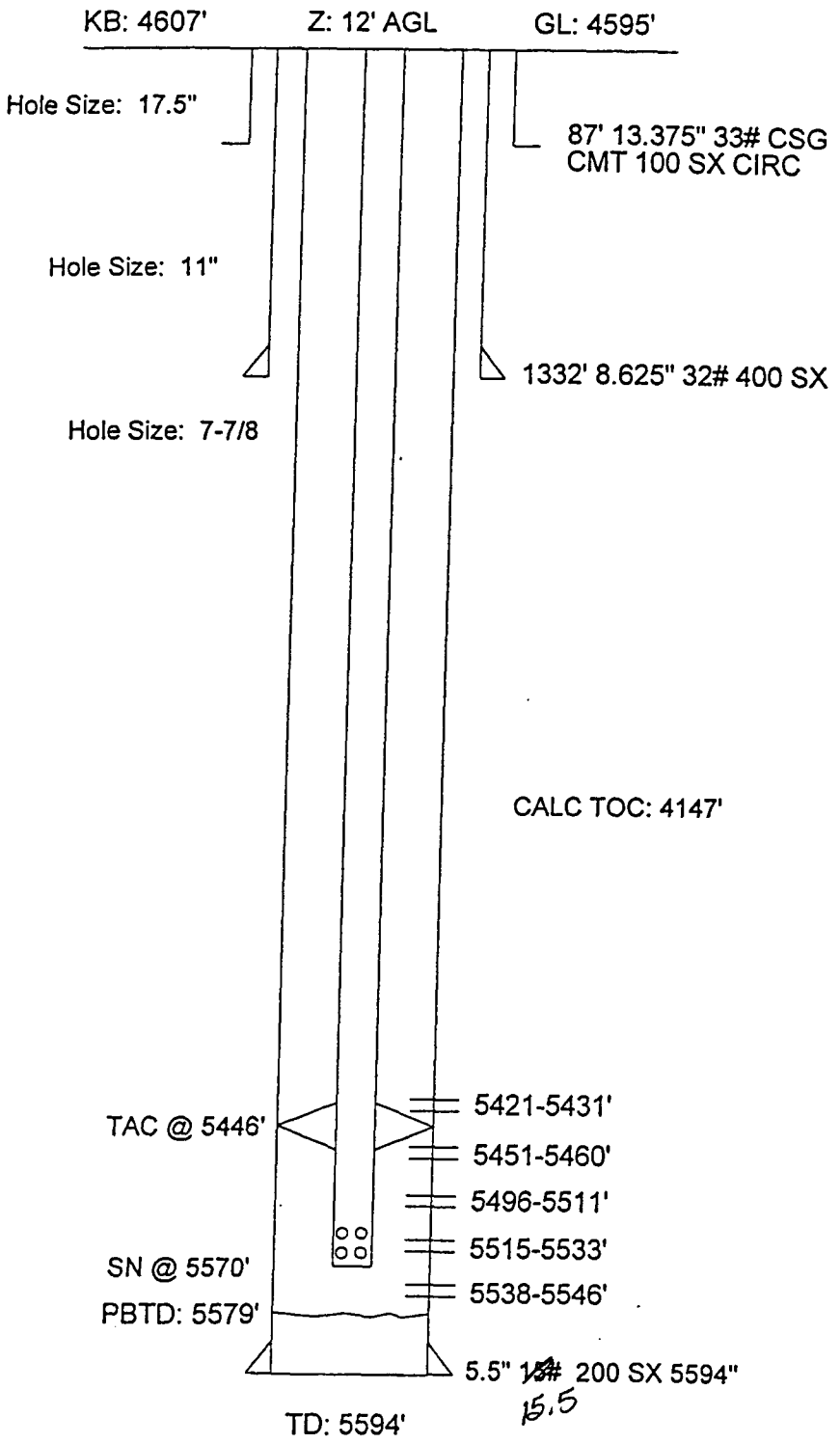
(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

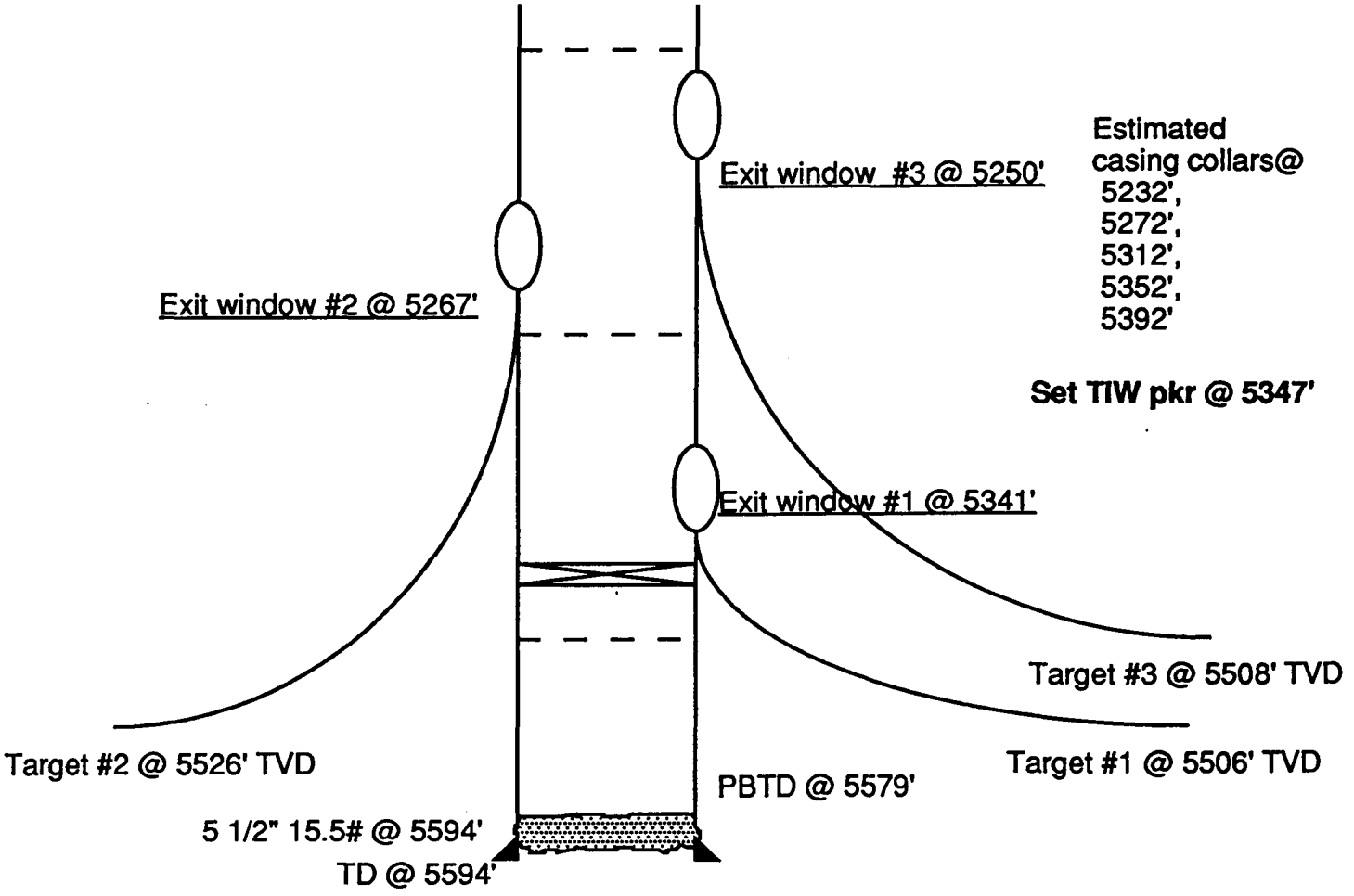
Ratherford Unit 14-32
Greater Aneth Field
2130' FNL & 1830' FEL
Sec. 14, T41S, R23E
San Juan County, Utah

PRODUCER



K M McCLELLAN 9-22-94
LA Tucker 5-17-96

Whipstock plan for Ratherford #14-32



Window	Btm-Top of window	Extension length	Curve radius	Bearing	Horiz Displ
1	5341-32	-	165	40	1500
2	5267-58	72	259	125	3300
3	5250-41	89	258	135	3300

*The double spline is 2.42 ft long and the bottom of the whipstock, latch, and debris sub are 5.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length.

Ratherford Unit Well #14-32
Multilateral Horizontal Drilling Procedure

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill multiple short radius horizontal laterals (1500-3300 ft).

1. Prepare location and dig working pit.

2. MIRU WSU, reverse unit, and H_2S equipment. Bullhead kill weight fluid down tubing.

3. Release packer, and pick up on wellhead to remove. ND wellhead and NU BOP's. Pressure test BOP's.

4. Continue to POH with tubing.

5. TIH with full gauge bit and casing scraper to PBTD. TOH with bit and scraper.

6. Ensure well will circulate, and set RTBP above perfs. **Pressure test casing to 1000 psi.**

7. RDMO WSU.

8. MIRU 24 hr WSU.

9. PU tubing, drill collars, and drill pipe in derrick and run in hole. Then POH and stand back.

10. RU wireline company and run gauge ring for casing down to packer setting depth.

11. Run packer on wireline and set using GR/CCL log to correlate with. RD wireline.

12. PU drillpipe with UBHO sub and latch assembly.

13. Latch into packer. Run gyro and obtain orientation of keyway on packer.

14. POH w/ gyro. POH w/ drill pipe and RIH w/ whipstock oriented on the surface for window azimuth desired.

15. Shear pilot mill bolt and start milling window.

16. POH and PU window mill and watermelon mill to finish window and drill 3 ft of formation.

17. POH w/ mills and RBIH w/ new mills to clean up window.

18. PU drill pipe and directional motors to drill curve. Use the gyro to drill until the inclination dictates that the gyro must be pulled.

19. Pull five stands of drill pipe and run steering tool to finish drilling the curve.

20. POH once curve is finished and PU lateral motor to drill the lateral using MWD.

21. Once lateral TD is reached, POH w/ directional equipment.

22. RIH w/ hook and retrieve whipstock.

23. PU new whipstock with extension in body for next window and orient on surface to desired azimuth.

24. Repeat steps 15-23, for each successive planned lateral.

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 04/15/97

API NO. ASSIGNED: 43-037-15858

WELL NAME: RATHERFORD 14-32
OPERATOR: MOBIL EXPL & PROD (N7370)

PROPOSED LOCATION:
SWNE 14 - T41S - R23E
SURFACE: 2130-FNL-1830-FEL
BOTTOM: 4463-FNL-0503-FWL
SAN JUAN COUNTY
GREATER ANETH FIELD (365)

LEASE TYPE: IND
LEASE NUMBER: 14-20-603-247A

PROPOSED PRODUCING FORMATION: PRDX

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

___ Plat
___ Bond: Federal[] State[] Fee[]
(Number _____)
___ Potash (Y/N)
___ Oil shale (Y/N)
___ Water permit
(Number _____)
___ RDCC Review (Y/N)
(Date: _____)

LOCATION AND SITING:

✓ R649-2-3. Unit: Ratherford

___ R649-3-2. General.

___ R649-3-3. Exception.

___ Drilling Unit.
Board Cause no: _____
Date: _____

COMMENTS: _____

STIPULATIONS: _____

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MOBIL E & P

Well Name: RATHERFORD UNIT 14-32 (RE-ENTRY)

Api No. 43-037-15858

Section: 14 Township: 41S Range: 23E County: SAN JUAN

Drilling Contractor BIG "A"

Rig # 25

SPUDDED:

Date 5/13/97

Time

How ROTARY

Drilling will commence

Reported by

Telephone #

Date: 5/14/97 Signed: JLT

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 14-32
9. API Well No.: 43-037-15858
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACT AMEND
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2130' FNL & 1830' FEL SEC.14, T41S, R23E

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACT AMEND	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

BOTTOM HOLE LOCATION
LATERAL #1: 1149' NORTH & 964' EAST FROM SURFACE SPOT (ZONE 1a)
LATERAL #2: 1893' SOUTH & 2703' EAST FROM SURFACE SPOT (ZONE 1b/1d)
LATERAL #3: 2333' SOUTH & 2333' EAST FROM SURFACE SPOT (ZONE 1a)

THERE IS A CHANGE OF PLANS ON LATERAL #1. THE NEW BHL FOR LATERAL #1 IS 600' NORTH & 750' WEST. THIS WILL BE APPROXIMATELY 60 FT FROM THE UNIT BOUNDARY.

ALSO LATERAL #2 HAS BEEN DROPPED.

THERE ARE NO OFFSET OPERATORS OR LEASED LEASES CONNECTING THE UNIT BOUNDARY.

Accepted by the Utah Division of Oil, Gas and Mining

FOR RECORD ONLY

RECEIVED
MAY 15 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Shirley Hawkins Title ENV. & REG. TECHNICIAN Date 05-06-97

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

ROCKY MOUNTAIN GEO-ENGINEERING
Well Logging • Consulting Geology • Coal Bed Methane Services • Computerized Logging Equipment & Software
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
2450 INDUSTRIAL BLVD. • GRAND JUNCTION, CO 81505
(970) 243-3044 • (FAX) 241-1085

Monday, June 09, 1997

Division of Oil & Gas Mining
State of Utah
355 W. North, Suite 350
Salt Lake City, UT 84180-1203

Re: Ratherford Unit 14-32 Lateral Leg 1 & 2
Sec. 14, T41S, R23E
San Juan County, Utah

43 037 15858
DRL
MOBIL

Dear Sirs:

Enclosed is the final computer colored log for the above referenced well.
10 WITH LOGS

We appreciate the opportunity to be of service to you and look forward to working with you again in the near future.

If you have any questions regarding the enclosed data, please contact us.

Sincerely,

Bill Nagel
Senior Geologist

BN/dn

Enc. 1 Final Computer Colored Log and Geology Report

cc Letter Only; Dana Larson; Mobil Oil; Midland, TX

MOBIL

RATHERFORD UNIT #14-32
HORIZONTAL LATERAL LEG#1 &#1A (SIDETRACK)
UPPER 1-A & 1-B
POROSITY BENCHES DESERT CREEK
SECTION 14, T41S, R23E
SAN JUAN, UTAH

GEOLOGY REPORT
by
DAVE MEADE
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

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WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #14-32 NW UPPER HORIZONTAL LATERAL LEG #1& #1A SIDETRACK IN 1-A UPPER POROSITY BENCH, DESERT CREEK
LOCATION:	SECTION 14, T41S, R23E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB:4595' GL:4607'
SPUD DATE:	5/13/97
COMPLETION DATE:	5/21/97
DRILLING ENGINEER:	LEWIS SIMOMS
WELLSITE GEOLOGY:	DAVE MEADE / JASON BLAKE
MUDLOGGING:	
ENGINEERS	DAVE MEADE / JASON BLAKE
CONTRACTOR:	BIG "A" RIG 25
TOOLPUSHER:	J. DEES /D. SIPE
HOLE SIZE:	4 3/4"
CASING RECORD:	SIDETRACK IN WINDOW AT 5352' MEASURED DEPTH
DRILLING MUD:	M-I
ENGINEER:	DANNE BEASON
MUD TYPE:	FRESH WATER & OIL EMULATION W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	6158' MEASURED DEPTH TVD-5599'
STATUS:	TOH & LAY DOWN TOOLS - PREPARE FOR LEG #2

DRILLING CHRONOLOGY
RATHERFORD UNIT #14-32
NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & #1A

DATE	DEPTH	DAILY	ACTIVITY
5/15/97	5344'	8'	TOH-LD XO & MULESHOE - PU & ORIENT WHIPSTOCK & LATCH ASSEMB. TIH & SET ANCHOR, SHEAR OFF WHIPSTOCK-MILL W 4 3/4" STARTER MILL 5344-5346-CIRC OUR-TOH-LAYDOWN STARTER MILL-PU WINDOW & WATERMELLON MILL-TIH. MILLING 5346-5352, PUMP SWEEPS
5/16/97	5352'	98'	CIRC OUT SWEEPS-LD 30 JTS DP, TOH & LD MISS ASSEMB. PU BIT & CURV BHA-ORIENT & TEST MWD & MOTOR-PU 10 JTS DP & RIH. RIG UP & RUN GYRO-TIME DRILL 5352-5356, DRLG 5356-5418'-PULL GYRO, DRILL & SURVEYS
5/17/97	5450'	145'	DIRL DRLG & SURVEYS- CIR BTMS UP @ 5545'-LD 29 JTS DP-TOH & PU NEW BHA (BUILD MORE ANGLE),TIH-DRLG & SURVEYS. LD 32 JTS DP & TOH-LD CURVE ASSEMB-PU LATERAL HOLE BHA & NB#2-HTC STR30-P.U. 32 JTS TUBING-TIH
5/18/97	5595'	139'	TIH-DIR DRLG & SURVEYS TO 5794'-CIR & LAY DOWN 5 JTS DP-PULL BACK TO 5610' MD & REAM TOOL FACE TO SIDETRACK WELL BORE-TIME DRLG 5610' TO 5618'-DID NOT KICK OFF-LAY DOWN 1 JT-REAM TOOL FACE 5580' TO 5585'
5/19/97	5585'	122'	REAM TOOL FACE 5580-5585'-TIME DLRG 5585' TO WORK PIPE TO KILL ANGLE-DIR DRLG & SURVEYS-WORK PIPE TO KILL ANGLE-DIR DRLG & SURVEY
5/20/97	5707'	353'	DIR DRLG & SURVEYS
5/21/97	6060'	98'	DIR DRLG & SURVEYS-CIR. BTMS UP @ 6158' (TD) & CIR. SWEEPS-TOH-LAY DOWN LATERAL ASSEMBLY-PICK UP RETRIVING HOOK-TIH-LATCH INTO WHIPSTOCK -PULL WHIPSTOCK-MAKE UP & P. U. WHIPSTOCK EXTENTION-TIH

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & #1A

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
5/14/97	5344'	0'			
5/15/97	5344'	0'			
5/16/97	5352'	8'			
5/17/97	5550'	198'			
5/18/97	5595'	199'			
5/19/97	5585'	122'			
5/20/97	5707'	353'			
5/21/97	6060'	98'			
5/22/97	6158'	TD			

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & #1A

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1	4 3/4"	STC	MF-3P	5352'/ 5595'	243'	18.5	13.1
#2	4 3/4"	HTC	STR-30	5595'/ 6158'	643'	72.5	8.9

Customer ... : Mobil
Platform ... : RATHERFORD UNIT
Slot/Well .. 14-32, 1A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICA SECTION	DOG LEG
5300	0.48	334.54	5297.36	47.45 N	124.01 W	106.21	0
5345	0.31	16.1	5342.36	47.74 N	124.06 W	106.48	0.72
5352	3.8	324.4	5349.35	47.95 N	124.19 W	106.72	51.66
5362	6.8	323.4	5359.31	48.69 N	124.73 W	107.64	30.01
5372	10.1	322.4	5369.2	49.86 N	125.62 W	109.1	33.03
5382	13.1	321.4	5378.99	51.44 N	126.86 W	111.1	30.07
5392	16.2	320.4	5388.67	53.4 N	128.46 W	113.61	31.1
5402	19	319.7	5398.2	55.72 N	130.4 W	116.61	28.08
5412	22	320.3	5407.56	58.4 N	132.65 W	120.08	30.07
5422	25.3	321	5416.72	61.5 N	135.19 W	124.06	33.12
5432	28.9	321.2	5425.62	65.05 N	138.05 W	128.58	36.01
5442	32.1	319.6	5434.24	68.96 N	141.29 W	133.61	33.01
5452	35.2	317.8	5442.56	73.12 N	144.95 W	139.08	32.56
5462	38.4	315.9	5450.57	77.48 N	149.05 W	144.96	33.96
5472	41.3	314.3	5458.25	82.02 N	153.57 W	151.21	30.76
5482	43.1	312.5	5465.65	86.63 N	158.45 W	157.71	21.68
5492	44.6	312.3	5472.87	91.3 N	163.57 W	164.39	15.06
5502	46.6	313	5479.86	96.15 N	168.82 W	171.29	20.62
5512	49.2	313.8	5486.57	101.24 N	174.21 W	178.47	26.67
5522	52.9	313.9	5492.85	106.63 N	179.82 W	186.02	37.01
5532	56.8	314	5498.61	112.3 N	185.71 W	193.96	39.01
5542	60.7	314.1	5503.79	118.25 N	191.85 W	202.26	39.01
5552	66.5	314.2	5508.24	124.48 N	198.27 W	210.96	58.01
5562	72.5	314.2	5511.74	131.01 N	204.99 W	220.06	60
5572	79	314.3	5514.2	137.77 N	211.92 W	229.47	65.01
5582	87.5	313.4	5515.37	144.64 N	219.08 W	239.1	85.47
5595	93.2	313.4	5515.29	153.57 N	228.52 W	251.69	43.85
5604.01	93.3	313.5	5514.78	159.76 N	235.05 W	260.4	1.57
5635.75	91.7	311.7	5513.4	181.22 N	258.39 W	291	7.58
5667.48	93.8	314.1	5511.88	202.79 N	281.61 W	321.62	10.04
5699.26	95.1	313.6	5509.41	224.74 N	304.45 W	352.36	4.38
5731.04	97.2	311	5506	246 N	327.82 W	382.8	10.48
5763	94	311	5502.89	266.87 N	351.82 W	413.25	10.01

Customer ... : Mobil
Platform ... : RATHERFORD UNIT
Slot/Well .. 14-32, 1A1B

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5300	0.48	334.54	5297.36	47.45 N	124.01 W	106.21	0
5345	0.31	16.1	5342.36	47.74 N	124.06 W	106.48	0.72
5352	3.8	324.4	5349.35	47.95 N	124.19 W	106.72	51.66
5362	6.8	323.4	5359.31	48.69 N	124.73 W	107.64	30.01
5372	10.1	322.4	5369.2	49.86 N	125.62 W	109.1	33.03
5382	13.1	321.4	5378.99	51.44 N	126.86 W	111.1	30.07
5392	16.2	320.4	5388.67	53.4 N	128.46 W	113.61	31.1
5402	19	319.7	5398.2	55.72 N	130.4 W	116.61	28.08
5412	22	320.3	5407.56	58.4 N	132.65 W	120.08	30.07
5422	25.3	321	5416.72	61.5 N	135.19 W	124.06	33.12
5432	28.9	321.2	5425.62	65.05 N	138.05 W	128.58	36.01
5442	32.1	319.6	5434.24	68.96 N	141.29 W	133.61	33.01
5452	35.2	317.8	5442.56	73.12 N	144.95 W	139.08	32.56
5462	38.4	315.9	5450.57	77.48 N	149.05 W	144.96	33.96
5472	41.3	314.3	5458.25	82.02 N	153.57 W	151.21	30.76
5482	43.1	312.5	5465.65	86.63 N	158.45 W	157.71	21.68
5492	44.6	312.3	5472.87	91.3 N	163.57 W	164.39	15.06
5502	46.6	313	5479.86	96.15 N	168.82 W	171.29	20.62
5512	49.2	313.8	5486.57	101.24 N	174.21 W	178.47	26.67
5522	52.9	313.9	5492.85	106.63 N	179.82 W	186.02	37.01
5532	56.8	314	5498.61	112.3 N	185.71 W	193.96	39.01
5542	60.7	314.1	5503.79	118.25 N	191.85 W	202.26	39.01
5552	66.5	314.2	5508.24	124.48 N	198.27 W	210.96	58.01
5562	72.5	314.2	5511.74	131.01 N	204.99 W	220.06	60
5572	79	314.3	5514.2	137.77 N	211.92 W	229.47	65.01
5585	81.3	314.5	5516.42	146.73 N	221.08 W	241.93	17.76
5604.01	79	315.3	5519.67	159.95 N	234.34 W	260.18	12.79
5635.75	79.2	318	5525.68	182.61 N	255.73 W	290.76	8.38
5667.48	77.4	318	5532.11	205.7 N	276.52 W	321.37	5.67
5699.26	77.5	317.5	5539.02	228.66 N	297.38 W	351.92	1.57
5731.06	80.2	317.8	5545.17	251.72 N	318.4 W	382.62	8.54
5762.87	83.5	318.7	5549.68	275.21 N	339.36 W	413.67	10.75
5794.62	84.6	318.7	5552.97	298.93 N	360.2 W	444.85	3.46
5826.46	84	318.5	5556.13	322.7 N	381.15 W	476.12	1.99
5858.16	81.6	320.4	5560.1	346.59 N	401.6 W	507.23	9.63
5889.91	80.8	321.7	5564.96	370.99 N	421.32 W	538.39	4.77
5921.56	79.7	322	5570.32	395.52 N	440.59 W	569.41	3.6
5953.38	81.8	323.3	5575.43	420.49 N	459.64 W	600.69	7.73

Customer ... : Mobil
Platform ... : RATHERFORD UNIT
Slot/Well .. 14-32, 1A1B

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5985.2	82.4	324.7	5579.81	445.98 N	478.17 W	632.13	4.75
6017.06	82.9	326.4	5583.88	472.04 N	496.04 W	663.71	5.52
6048.84	83.7	328.7	5587.59	498.67 N	512.97 W	695.27	7.62
6080.69	83.9	330.8	5591.03	526.02 N	528.93 W	726.91	6.58
6112.48	83	332.7	5594.66	553.84 N	543.87 W	758.42	6.58
6126	83.1	333.8	5596.29	565.83 N	549.91 W	771.78	8.11
6158	84.45	335.4	5599.76	594.56 N	563.56 W	803.36	6.52

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & #1A

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
5/15/97	5141'	8.4	27	–	–	–	11.6	N/A	N/A	5500	960	–	0%	100%
5/16/97	5386'	8.4	26	–	–	–	11.6	N/A	N/A	1000	80	–	0%	100%
5/16/97	5389'	8.4	29	-	-	-	11.6	6.9	<1/32	1000	80	–	21%	79%
5/17/97	5545'	8.0	29	2	2	0/0	11.6	5.7	<1/32	1200	80	–	21%	79%
5/18/97	5714'	8.0+	29	2	2	0/0	11.6	6.1	<1/32	1250	80	–	21%	79%
5/19/97	5590'	8.0	28	2	2	0/0	11.8	7.2	<1/32	1300	40	–	22%	78%
5/20/97	5863'	8.0	29	2	2	0/0	11.8	6.9	<1/32	1250	40	–	22%	78%
5/21/97	6145'	8.0	29	2	2	0/0	11.8	5.6	<1/32	3500	40	–	23%	77%

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & 1A

DEPTH		LITHOLOGY
5350.00	5360.00	"LS crm-wh-tan,occ ltbrn,crpxl-micxl,rthy-chk,cln ip,pred LS PKST,chty-tr brn-dkbrn CHT frag,scat mic fos,v sl arg,tt-v rr intxl P0R,NFSOC"
5360.00	5370.00	"LS AA,sl anhy,tr CHT AA,w/v thn dkgybrn-dkbrn,micxl,arg,sl lmy,occ mrly DOL-tt,NFSOC"
5370.00	5380.00	"LS crm-tan,offwh,crpxl-micxl,rthy,chk,arg,w/scat trnsl-blk CHT frag,tr intbd dkgybrn-dkbrn micxl lmy DOL,bcmb dkgybrn-blk,sbplty-sbblky,carb,calc-sl dol,slty SH "
5385.00	5394.00	"LS,argil,dk gr-gr,dens,foss (fusil,crin),LS,brn,dens,micxl,rrCHT,rrSHLaa,carb"
5390.00	5401.00	"LS,tn-ltbrn-gr,vfn-micxln,sl argil,chky,sl foss,CHT,tn-dkgr-blk"
5400.00	5410.00	"LS,tn-lt brn-brn,fn-vfnxln,dens-sl chky,sl foss (brach),com dkgr-blk micxln lmy DOL,com brn-dkbrn CHT, NFSOC"
5410.00	5421.00	"LS,tn-ltbrn-brn,fn-vfnxln,sl foss,sl argil aa,LS,wht-lttn,fn-mxln,GRNSTN ip,rr lt tn CHT,bri min flour,NSOC"
5420.00	5430.00	"LS,wht-tn-crm-lt brn ip,fnxln,crsxln ip,rr SS,ltgr,fngrn,wl sort,calc cem,scat dolo LS,gr-dk gr,vfn xln,scat dkgr CHT"
5430.00	5440.00	"LS,crm-tn-lt brn,fn-mxln,GRNSTN tex,sl foss,pr-fr intrgrn por,yel-grn flour, sl brn stn,wk stm cut,"
5440.00	5450.00	"LS,crm-tn-lt brn,fn-mxln,GRNSTN tex,bcm v foss ip,yel-grn flour,pr-fr intrgrn por,sl dkbrn stn,wk stm cut"
5450.00	5460.00	"LS,crm-tn-lt brn,fnxln,dens-sl sndy tex,sl foss,scat xtn calc,bcm tt,sl DOL ip,NFSOC"
5460.00	5470.00	"LS,crm-tn-lt brn,fnxln,dens-sl sndy tex,sl foss,scat xtn calc,bcm tt,sl DOL ip,NFSOC"
5470.00	5481.00	"LS,crm-tn-lt brn,fnxln,dens-sl sndy tex,sl foss,scat xtn calc,bcm tt,sl DOL ip,scat carb SHL,blk,sub blky-sub plty,dolo,NFSOC"
5480.00	5500.00	"SH dkgy-blk,sbblky-sbplty,calc-dol,carb,sl slty,mica,sooty,w/v thn tan-crm-wh crpxl-micxl arg chk LS & v rr tan-ltbrn micxl-crpxl arg lmy DOL incl,tt,NFSOC"
5500.00	5510.00	"SH AA,LS crm-tan,ltbrn,micxl,occ crpxl,v slty ip,occ sl dol,anhy,v rr mic fos,tt,NFSOC w/DOL brn-mbrn,crpxl,rr micxl-micsuc,rthy,lmy,v rr intxl POR,scat dull yel-dull mnr FLOR,rr brn STN,v p slow CUT"
5513.00	5520.00	"LS AA,tt,n-v p mnrl FLOR,NSOC,scat CHT frag AA,tr SH cvgs;pred DOL tan-brn,occ mbrn crpxl-vfxl,micsuc-gran,sl alg,lmy ip,occ sl arg,v sl ool-oolicastic,tr-fr intxl-rr ool-alg POR,tr dull-bri yel FLOR,tr ltbrn-rr blk STN,tr-fr slow- mod fast CUT"
5520.00	5530.00	"DOL AA,POR-FLOR-STN-CUT AA,w/thn intbd LS-scat CHT frag"

DEPTH	LITHOLOGY

5530.00 5545.00 "DOL ltbrn-brn,micxl-vfxl,gran-micsuc,occ suc,alg,v sl ooc,pred DOL GRNST,scat DOL PKST inxl,v sl anhy,rr mic-Crin fos,rr CHT frag,v rr v thn wh-crm LS lams,fr intxl-alg POR,rr ool POR,fr dull-bri yel FLOR,tr-fr ltbrn-rr blk STN,fr-g slow-mod fast CUT"

5550.00 5560.00 "pred DOLO GRNSTN,brn-mbrn,fnxln,gran-suc,rr LS incl,sl foss,rr lt CHT; fr-gd algal intrxln por,even brn stn,even dull yel-grn flour,sl strm cut"

5560.00 5570.00 "DOL GRNSTN,brn-ltbrn,fnxln,gran-suc,LS,tn-ltbbrn,micxln,dens,scat CHT,tn-brn;DOLO w gd brn-lt brn stn,fr intrxln POR,dull yel FLOUR,sl strm CUT"

5571.00 5580.00 "pred DOLO GRNSTN,ltbrn-brn,fn-m xln,suc-gran,fr-gd algal POR,even brn stn, dull-mod yel FLOUR,fr strm cut, minor LS,tn-lt brn aa, scat lt brn-tn CHT"

5582.00 5591.00 "DOL GRNST ltbrn-brn,fn-m xln AA,fr-gd algal POR w STN,FLOUR & CUT AA, incr lt brn-tn CHT AA"

5590.00 5595.00 "DOL GRNST, brn-lt brn,fn xln,gran-suc,sl foss,grdg alg POR,STN & CUT AA,incr lt brn-tn-lt gr brn CHT"

5600.00 5606.00 "DOL GRNST brn-lt brn,fn xln,gran-suc,sl fos,scat wh-crm crpxl-micxl,plty LS incl,lt brn,micxln,dens,scat CHT,tn-ltbrn;tr-fr intxl-tr alg POR,fr-g dull-bri yel FLOR,fr-g brn STN-rr blk dd o STN,fr-g mod fast strmg CUT"

5610.00 5620.00 "DOL AA,POR-FLOR-STN-CUT AA,w/scat mic-Crin fos,tr ltbrn-tan crpxl DOL PKST incl"

5620.00 5630.00 "DOL AA,incr DOL PKST,decr CHT frag,tr-g intxl-alg POR,tr-g dull-bri yel FLOR,fr-g lt-mbrn STN,occ blk dd o STN,fr-g mod fast stmg CUT"

5630.00 5640.00 "DOL lt-mbrn,occ tan,crpxl-vfxl,micsuc-gran,occ alg,pred DOL GRNST,w/intbd DOL PKST,chty-tr trnsl-tan-gy CHT frag,v rr mic-Crin fos,v sl calc,sl slty ip,tr-fr intxl-tr alg POR,fr dull-bri yel FLOR,fr lt-dkbrn STN,rr dd o STN,fr-g mod fast stmg CUT"

5640.00 5650.00 "DOL AA,incr DOL PKST,POR-FLOR-STN-CUT AA,w/scat tan-wh-crm crpxl-micxl sl plty LS PKST"

5650.00 5660.00 "DOL bcmg pred DOL PKST w/v thn plty LS,incr CHT FRAG,decr POR-FLOR-STN-CUT"

5660.00 5670.00 "DOL AA,incr brn alg DOL GRNST,decr CHT frag,occ scat mic-Crin fos,fr POR-FLOR-STN-CUT"

5670.00 5690.00 "DOL lt-mbrn,occ tan,micxl-vfxl,crpxl ip,misuc-grn,occ sl alg-v sl ool,abnt mic fos,rr Crin fos,tr trnsl-mbrn CHT frag,occ sl anhy DOL PKST incr w/depth,tr-fr intxl-alg POR,occ ANHY fl,tr-fr dull-bri yel FLOR,fr ltbrn-rr blk STN,tr-fr slow-mod fast CUT"

5690.00 5700.00 "DOL AA,pred tt-micsuc v fos DOL PKST,incr CHT frag,occ anhy-ANHY cmt,tt-fr intxl POR,tr-fr dull-bri yel FLOR,tr-fr ltbrn STN,rr blk dd o STN,tr slow-mod fast CUT"

5700.00 5710.00 "DOL lt-mbrn,occ tan,crpxl-vfxl,micsuc-gran,alg,occ anhy-tr ANHY xl-incl-occ cmt,chty-tr CHT frag,v sl ool,incr POR-FLOR-STN-CUT"

DEPTH	LITHOLOGY

5710.00 5720.00 "DOL AA,pred intbd alg DOL GRNST & DOL PKST,tr-fr intxl-alg POR,tr-fr dull-bri yel FLOR,fr ltbrn-rr blk STN,fr slow-mod fast CUT"

5720.00 5740.00 "DOL lt-mbrn,occ tan,crpxl-vfxl,micsuc-gran,occ alg,abnt mic fos,v rr Crin-Cor fos,pred DOL GRNST w/intbd DOL PKST,sl anhy-v rr ANHY cmt,rr tan-crm crpxl plty LS PKST,fr intxl-tr alg POR,tr-fr dull-bri yel FLOR,tr ltbrn-blk STN,fr slow-mod fast CUT,w/v thn intbd blk carb SH"

5740.00 5750.00 "DOL AA,grdg to & incr blk sbblky-sbplty,frm-brit,sl dol-calc,mica,slty,carb-sooty SH"

5750.00 5760.00 "SH blk,sbblky-plty,frm-brit,calc,sl dol,occ v sl slty,mica ip,carb,sooty,w/v thn intbd brn-mbrn DOL PKST & GRNST"

5760.00 5770.00 "SH AA,scat DOL AA"

5770.00 5780.00 "SH blk,carb,AA,v thn scat DOL AA,v rr trnsl CHT frag,rr wh-tan,crpxl,chk,arg,plty LS frag,NFSOC"

5780.00 5794.00 "*NOTE:SAMPLES NOT CIRCULATED OUT PRIOR TO PULLING UP HOLE TO BASE OF CURVE SECTION & SIDETRACKING WELL BORE "

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 SIDE TRACK #1A

DEPTH	LITHOLOGY

5585.00 5590.00 "DOL ltbrn,occ mbrn,crpxl-vfxl,gran-micsuc ip,v sl alg,intbd DOL GRNST & DOL PKST,v rr mic fos,tr-fr intxl-rr alg POR,fr-g dull-bri yel FLOR,tr ltbrn STN,fr slow-mod fast stmg CUT,w/tr trnsl-tan CHT frag,scat crpxl tan-crm plty sl dol LS frag"

5590.00 5600.00 "DOL AA,sl incr DOL PKST,incr LS & CHT,decr POR-FLOR-STN-CUT AA"

5600.00 5610.00 "DOL PKSTN grd to GRNSTN ip,brn,vfn-fnxln,suc,scat anh strg,wht-lt tn,scat CHERT,transl tn; fr intrxln POR,even brn STN,dull yel FLOUR,sl strm CUT"

5610.00 5620.00 "DOLO PCKSTN,brn,fn-mxln,dens-sl gran,suc ip,com CHT,trans brn;even brn STN,FLOUR & CUT aa"

5620.00 5630.00 "DOLO PCKSTN,brn,fn-mxln,dens-sl gran,suc ip,com CHT,trans brn;scat DOL,crm-lt tn, cryptoxln,dens; even brn STN,even dull yel FLOUR,sl stm CUT"

5630.00 5640.00 "DOLO PCKSTN grd to GRNSTN,brn,fn-vfnxln,dens-sl gran,suc ip,com CHT,trans brn;even brn STN,FLOUR & CUT aa"

5640.00 5650.00 "DOLO PCKSTN grd to GRNSTN ip,brn-ltbrn,fn-vfn xln,dens-suc ip,sl foss,com CHT,trnsl tn;lt brn STN,even dull FLOUR,vsl-no CUT"

5650.00 5660.00 "DOLO PCKSTN grd to GRNSTN ip,brn-ltbrn,fn-vfn xln,dens-suc ip,sl foss,com CHT,trnsl tn,rr LS,lttn,micxln,hd,dens;lt brn STN,decr FLOUR & CUT aa"

5660.00 5670.00 "DOL GRNSTN,brn,fnxln,suc-gran,sl foss ip,decr CHT aa; fr-gd even brn STN,fr intrgran POR,dull yel FLOUR,fr stm CUT"

5670.00 5680.00 "DOL PKSTN gr to GRNSTN,lt brn-brn,fn-mxln,foss(crin),dens-suc ip,rr CHT;gd brn STN,intrxln-rr vug POR,mod bri FLOUR,sl-m strm CUT"

5680.00 5690.00 "DOL GRNSTN,brn,fn xln,suc,algal ip;even brn STN,dull yel FLOUR,fr intrxln POR,sl strm CUT"

5690.00 5700.00 "DOL GRNSTN,brn,fn xln,suc,algal ip,sl foss;even brn STN,dull yel FLOUR,fr intrxln POR,sl strm CUT"

5700.00 5710.00 "DOL PCKSTN,brn,fn xln,den-suc ip,vuggy ip,scat-com CHT,tn-lt brn transl; lt brn-occ blk STN, dull FLOUR,scat VUG POR,sl CUT"

5710.00 5720.00 "DOL GRNSTN,brn,fn-vfnxln,dens-suc ip,scat tn-lt brn transl CHT; even brn STN, dull FLOUR, pr intrxln POR,sl strm CUT"

5720.00 5730.00 "DOLO GRNSTN, brn-lt brn aa,STN,POR,FLOUR & CUT aa"

DEPTH	LITHOLOGY

5730.00 5740.00 "DOL GRNSTN,brn,fn-vfnxln,dens-suc ip,scat tn-lt brn transl CHT,scat FOSS; even brn STN, dull FLOUR, pr intrxln POR,sl strm CUT"

5740.00 5750.00 "DOL GRNSTN,brn,fn-vfnxln,dens-suc ip,scat tn-lt brn transl CHT; even brn STN, dull FLOUR, pr intrxln POR,sl-no CUT"

5750.00 5760.00 "DOLO GRNSTN aa bcm lt brn-tn,hd,dens ip,fn-vfnxln,suc ip to dens,scat-com tn-lt brn transl CHT,decr intrxln POR,decr STN,FLOUR & CUTaa"

5760.00 5770.00 "DOL GS brn,occ tan,rr mbrn,micxl-vfxl,gran-micsuc,rr DOL PKST incl,v rr scat LS frag,occ LS cmt,tr mic fos,scat CHT frag,fr-g intxl POR,g dull-bri yel FLOR,fr ltbrn STN,fr-g mod fast stmg CUT"

5770.00 5780.00 "DOL AA,scat CHT AA,POR-FLOR-STN-CUT AA"

5780.00 5790.00 "DOL AA,incr CHT frag,v rr crm-wh,crpxl plty LS frag,occ LS cmt,fr intxl POR,fr-g dull-bri yel FLOR,tr-fr ltbrn STN,fr-g slow-mod fast stmg CUT"

5790.00 5800.00 "DOL ltbrn,occ mbrn,crpxl-vfxl,gran-micsuc,occ alg,w/tr DOL PKST incl,v rr LS cmt,tr trnsl-mot-ltbrn CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn STN,rr blk dd o STN,fr-g slow-mod fast CUT"

5800.00 5810.00 "DOL AA,decr CHT frag,POR-FLOR-STN-CUT AA"

5810.00 5820.00 "DOL ltbrn,occ brn,v rr gy,crpxl-micxl,gran-micsuc,v sl alg,rr LS cmt,v rr CHT frag,POR-FLOR-STN-CUT AA"

5820.00 5830.00 "DOL ltbrn,occ m brn,crpxl-vfxl,gran-micsuc,v sl alg,pred DOL GRNST,v rr DOL PKST incl,scat trnsl-bf,mot CHT frag,fr-g intxl-v rr alg POR,fr-g dull-bri yel FLOR,tr ltbrn-v rr blk STN,fr slow-mod fast stmg CUT"

5830.00 5840.00 "DOL AA,sl incr DOL PKST,sl decr POR,FLOR-STN-CUT AA"

5840.00 5850.00 "DOL occ ltgy,AA,decr CHT frag,sl incr DOL PKST,POR-FLOR-STN-CUT"

5850.00 5870.00 "DOL ltbrn,occ mbrn,rr ltgy,crpxl-vfxl,gran-misuc,incr crpxl dns DOL PKST,n-v sl alg,pred DOL GRSTN,scat trnsl-brn-ltgy CHT frag,tt-fr intxl-v rr alg POR,tr-g dull yel FLOR,rr-fr lt-mbrn STN,tr slow-fast stmg CUT"

5870.00 5880.00 "DOL ltbrn,occ tan-ltgy,crpxl-vfxl,micsuc-gran ip,intbd DOL GRNST & PKST,incr LS cmt-v rr plty crpxl crm LS PKST,v rr mic fos,scat trnsl-bf CHT frag,tr-fr intxl POR,tr-fr dull-tr bri yel FLOR,tr ltbrn STN,tr-fr slow-mod fast CUT"

5880.00 5890.00 "DOL AA,sl incr DOL PKST,decr POR-FLOR,STN-CUT AA"

5890.00 5900.00 "DOL AA,decr DOL PKST,incr POR,FLOR-STN-CUT"

5900.00 5910.00 "DOL ltbrn,occ mbrn,rr ltgy,crpxl-vfxl,gran-misuc,intbd crpxl dns DOL PKST & DOL GRSTN,scat trnsl-brn-ltgy CHT frag,tt-tr intxl POR,tr-fr dull yel FLOR,rr-tr lt-mbrn STN,tr slow-fast stmg CUT"

5910.00 5920.00 "DOL AA,incr tt tan-ltgy DOL PKST,scat CHT frag,lmy-LS rich cmt ip,tr-fr intxl POR,fr dull-bri yel FLOR,rr-tr lt brn STN,tr-fr slow dif-v slow stmg CUT"

DEPTH	LITHOLOGY

5920.00 5930.00 "DOL ltbrn-tan,rr crm-ltgy-brn,plty,pred crpxl-vfxl,occ micsuc-gran,pred DOL PKST,w/scat DOL GRNST,rr tan-trnsl CHT frag,occ bnd,tt-tr intxl POR,fr dull-bri yel FLOR,rr-tr ltbrn STN,rr slow stmg-tr slow dif CUT"

5940.00 5950.00 "DOL AA,incr tt sl fos DOL PKST,scat plty,ltbrn-tan-crm occ mot crpxl-micxl,rthy,dol LS frag,v sl chty,tt-tr intxl POR,tr dull-bri yel FLOR,rr ltbrn STN,v p slow CUT"

5950.00 5960.00 "INTBD lmy tt DOL PKST & tt plty LS PKST AA,v thn intbd DOL GRNST w/LS rich cmt AA,rr intxl POR,tr dull-bri yel FLOR,n-rr ltbrn STN,rr slow dif CUT"

5962.00 5971.00 "LS,crm-lt gr-brn,micxln,dens,sl foss ip,DOL PKST,tn-lt brn,vfn-micxln,dens-mic suc ip,scat transl CHT; scat dull FLOUR, v pr vis POR, v pr STN, v sl-no cut"

5973.00 5981.00 "LS,crm-lt brn,mic-crpxln,dens,sl foss,blk carb shl ptgs ip,blk res STN on frac faces,v dull FLOUR,no vis POR,v sl CUT,rr DOL & CHT aa"

5983.00 5990.00 "LS grd to DOL LSip,crm-lt brn,mic-crpxln,dens,foss (fusil),DOLO PCKSTN,tn-lt brn,vfn-micxln,dens-sl suc ip,scat STN,FLOUR & CUT aa"

5992.00 6001.00 "LS,crm-lt brn,foss aa,DOLO PCKSTN,lt brn-grbrn,vfn-micxln,dens-sl suc ip,no vis POR,scat STN,scat dull FLOUR,no-vsl CUT"

6000.00 6010.00 "DOLO PCKSTN,tn-lt brn,vfn-micxln,dens-sl suc ip,LS,crm-lt brn,micxln,sl foss,dens;v sl STN,spotty FLOUR,no vis POR,vsl-no CUT"

6010.00 6020.00 "DOLO PCKSTN,tn-lt gr,vfn-micxln,dens-sl suc ip,LS,crm-lt brn,micxln,sl foss,dens;v sl-no STN,spotty min FLOUR,no vis POR,no CUT"

6020.00 6030.00 "DOLO PCKSTN,tn-lt gr-lt brn,vfn-micxln,dens-sl suc ip,LS,crm-lt brn,micxln,sl foss,dens;STN,FLOUR,POR aa,no CUT"

6030.00 6040.00 "LS grd to DOLO LS,crm-lt gr-lt brn,dens,micxln,DOLO PCKSTN,tn-lt brn,micxln,dens-v sl suc ip,v sl-no vis POR,no stn,spty dull min FLOUR,no cut"

6040.00 6050.00 "DOLO PCKSTN grd to GRNSTN,fn-vfn xln,foss,gran-suc ip,LS aa;gd brn-dk brn STN,intr gran-vug POR,good FLOUR,gd strm CUT"

6050.00 6060.00 "LS grd to DOL LS ip,crm-brn,vfnxln,foss,scat PYR,DOL aa,rr CHT;pr-fr intr xln & ppt POR,fr dk brn stn, spty FLOUR,pr-fr stm CUT"

6060.00 6070.00 "LS,crm-brn,vfnxln,foss,DOL GRNSTN,tn-brn,fn-vfnxln,suc ip,algal ip;fr dk brn STN,fr intrxln & vug POR,fr yel-grn FLOUR,fr str CUT"

6070.00 6080.00 "LS,crm-brn,vfnxln,foss,DOL GRNSTN,tn-brn,fn-vfnxln,suc ip,algal ip; STN,POR,FLOUR,& CUT aa"

6080.00 6090.00 "LS grd to DOL LS,tn-lt brn,mic-cyptxln,sl pyr ip;scat dk brn STN,rr vug POR,scat FLOUR,fr stm CUT"

DEPTH	LITHOLOGY

6090.00 6100.00 "LS crm-tan,occ brn-gybrn,crpxl-micxl,plty,pred dol LS PKST,rr PYR xl,rr scat trnsl CHT frag,n-rr intxl-poss frac POR,n-rr spty dull-bri yel FLOR,n-v rr spty ltbrn STN,n-v p slow dif CUT,w/scat brn-mbrn crpxl-micxl,rr vfxl DOL
PKST-GRNST,v p FLOR-STN-CUT"

6100.00 6110.00 "LS AA,w/thn intbd DOL PKST & v thn lmy DOL GRNST,POR-FLOR-STN-CUT AA"

6110.00 6120.00 "LS AA,CHT AA,scat tt-micsuc DOL,occ ANHY fl frag,scat mic-Crin fos,POR-FLOR-STN-CUT AA"

6120.00 6130.00 "LS tan-brn,occ crm,crpxxl-micxl,v rr micsuc,pred tt dol chty LS PKST-v rr LS GRNST,n-v rr dull yel FLOR,n vis STN,n-v rr slow dif CUT,scat trnsl CHT frag,tr intbd brn-gybrn DOL PKST & v rr GRNST,occ v slty-v sl sdy,rr intxl
DOL POR-FLOR-STN-CUT AA"

6130.00 6140.00 "LS & DOL AA,POR-FLOR-STN-CUT AA,scat trnsl-bf-v rr spec "ORNG" CHT frag,w/v thn intbd v dol SLTST-grdg to v slty DOL"

6140.00 6158.00 "LS crm-brn,crpxl-micxl,v rr micsuc,dol,arg ip,pred tt dol LS PKST,w/trnsl-bf spec orng scat CHT frag,occ sl slty,w/intbd tan-brn-gybrn crpxl-micxl,occ arg-v slty DOL,grdg to v dol SLTST ip,scat Crin-mic fos,tt-v rr intxl POR,n-v p spty FLOR,n STN,v p CUT"

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 NW UPPER 1-A HORIZONTAL LATERAL LEG #1 & # 1A

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4607'
LOWER ISMAY		5380	5376	-769
GOTHIC SHALE		5479	5463	-856
DESERT CREEK		5508'	5484'	-877
DC 1-A		5514'	5488'	-881
DC 1-B		5573'	5514'	-907

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #14-32 Horizontal Lateral Leg #1 in Section 14, T41S, R23E, was a re-entry of the Mobil Ratherford Unit #14-32, and was kicked off in a northwesterly to northerly direction from 5352' measured depth, 5352' true vertical depth, on May 15, 1997. The lateral reached a measured depth of 6158', true vertical depth of 5599.8' at total depth, with a horizontal displacement of 803' and true vertical plane 335 degrees, on May 21, 1997. The lateral was drilled with one problem, which was encountering the Gothic Shale and having to pull back into the curve at the base of the 1-A zone and sidetracking the lateral. This well used a fresh water and oil emulation with polymer sweeps as the drilling fluid. No visible amount of oil was noted while drilling the curve, and none during the lateral section. The background gases noted on the accompanying mud log (through out this leg) reflected the oil in the drilling fluid through out most of the curve and lateral sections, and gradually dropped after encountering the tight dense carbonate near the end of the sidetracked lateral. The samples showed a minor amount of oil contamination through out the drilling of most of the curve and lateral sections.

The primary objective of the Ratherford Unit #14-32 Horizontal Lateral Leg #1 was the upper 1-A Porosity Bench, and to identify and define the porosity bench, the effective porosity and reservoir properties in the 1-A zone of the Desert Creek Member of the Upper Paradox Formation.

The Lower Ismay, Gothic Shale, the transition zone at the top of the Desert Creek, as well as the 1-A porosity bench was encountered while drilling the curve section of the lateral. Kick off point for this lateral was just above the top of the Lower Ismay, in the tight carbonates of the Upper Ismay. The base of the Upper Ismay was predominately white to cream to tan, occasionally light brown, cryptocrystalline to microcrystalline, chalky, cherty, slightly anhydritic, occasionally fossiliferous limestone. Interbedded in the limestones were argillaceous, brown to gray brown, some dark brown microcrystalline to microsucrosic dolomite, some rare very thin black, carbonaceous, slightly calcareous to dolomitic shale near the base, and scattered brown to black to translucent chert fragments. There was no to very rare visible porosity in the Upper Ismay, with no sample shows or gas increases. The dolomites at the base of the Upper Ismay graded into the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5380' measured depth, 5376' true vertical depth, at the base of the very thin Hovenweep shale. The Lower Ismay was a predominately a light gray to light gray brown, white to cream, becoming light to medium brown, cryptocrystalline to microcrystalline, rare very finely crystalline to microsucrosic, slightly argillaceous to clean, very slightly silty, slightly dolomitic, anhydritic and slightly cherty limestone with a trace of scattered micro fossils, and a trace of scattered intercrystalline porosity, with no to very rare, spotty dull yellow fluorescence, very rare black dead stain and only a very poor slow diffuse to ring cut. Interbedded in the limestones were very rare light to dark brown, thin dolomites which were cryptocrystalline to microcrystalline, earthy to clean, cherty, anhydritic, with no visible porosity, and no fluorescence, stain or cut and scattered translucent to dark brown cherts. The basal Lower Ismay became a light to medium gray to gray brown, clean to very argillaceous dolomite that were cryptocrystalline to microcrystalline. The limestones in the base were very thin mottled gray to gray brown, cryptocrystalline to microcrystalline, very cherty, and clean to argillaceous. The basal dolomites and limestones graded into the Gothic Shale. The very thin dolomites had a no to very poor intercrystalline porosity, but no fluorescence, stain or cut.

The top of the Gothic Shale was at 5479' measured depth, 5463' true vertical depth. The Gothic Shale is predominantly a dark gray to black, silty, carbonaceous, brittle to firm, subblocky to blocky to platy, calcareous to slightly dolomitic and slightly micaceous. The top of the Gothic was gradational from the very thin interbedding of very argillaceous, carbonaceous limestone and very argillaceous, limy dolomite, with the dolomite grading into very dolomitic, carbonaceous shale. The top of the Gothic was picked predominantly by the decrease in penetration rate and the increased percentage of shale in the samples.

Between the Gothic Shale and Desert Creek Porosity Members is a transitional zone, which appears to be gradational. The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in this leg occurred at a measured depth of 5508' and a true vertical depth of 5484'. In this leg the zone was predominantly a very silty, dolomitic limestone; which was cream to tan, some gray to white to brown, cryptocrystalline to microcrystalline, argillaceous, with very rare intercrystalline porosity, but only very spotty dull mineral fluorescence, and visible stain or cut. There were thin gray brown to brown dolomites, which were very limy, argillaceous, microcrystalline and slightly silty, with had no visible porosity and no visible staining, fluorescence or cut. The limestones graded into and had cyclic deposits of very thin dolomite packstones and dolomitic to limy, off-white to light gray, siltstones. The dolomites became cleaner and graded into the porosity of the 1-A zone.

The top of the Desert Creek 1-A zone was picked at 5514' measured depth, 5488' true vertical depth. The pick was based on the increase in the rate of penetration and sample interpretation. The 1-A lithology in this lateral was a slightly algal, very fossiliferous dolomite grainstone porosity below the Desert Creek top. The 1-A zone had thinly interbedded dolomitic limestone packstones near the top and at the base of the zone. The dolomite was predominately very granular with intercrystalline to very rare algal porosity, some scattered chert fragments, and a fair to good fluorescence, brown stain and a moderately fast to fast cut. The very thin limestones had no visible porosity, fluorescence, stain or cut.

At a measured depth of 5573', 5514' true vertical depth, the top of the 1-B zone was picked. The pick was based on an increase in rate of penetration and sample interpretation. The sample top of the 1-B in this lateral was a light brown to tan, very cherty dolomite packstones and very thin grainstones with thin interbedded tight dolomitic limestone packstone between the 1-A and 1-B zones. The dolomite was predominately tight to occasionally granular with streaks of fair intercrystalline to rare of algal porosity, some scattered chert fragments, and a trace to good fluorescence, brown stain and a moderately fast cut. The thin very thin limestones noted had no visible porosity, fluorescence, stain or cut.

As the curve was being completed at the top of the 1-B zone, the dolomites became increasingly tight and limy. While drilling the curve through the upper Desert Creek section, the 1-A porosity bench was defined by the interval 5514' measured depth, 5488' true vertical depth to 5558' measured depth, 5409' true vertical depth. The top of the porosity bench was marked by a facies change, which was very sharp, as the drill rate increased rather very rapidly. The base of the porosity zone was gradational as the penetration rate decreased slowly while landing the curve.

At a measured depth of 5595', 5515' true vertical depth, with a horizontal displacement of 251' in the tight Dolomite and limestone packstone and very thin, slightly algal dolomite grainstones at the top of the 1-B horizon, a trip was made to change the bottom hole assemblies. Upon resumption of drilling in the lateral, the well bore was drilled at a slight upwards angle in the light brown to brown, micro to very finely crystalline, microsucrosic to granular, slightly fossiliferous, algal, slightly anhydritic, occasionally cherty dolomite grainstone. The dolomite had interbedded, very rare, thin brown, microcrystalline dolomite packstones. These dolomites had very good intercrystalline to slightly algal porosity, with dull yellow fluorescence, fair to good brown stain and a good streaming cut. The thin packstones were tight, with no visible porosity, fluorescence, stain, or cut. As the lateral

continued upward to try to reacquire the 23' of porosity noted in the curve section of the 1-A zone, the dolomites became increasingly light brown to tan, tight dolomite packstone with very thin white to tan, dolomitic limestone packstone. This lithology of interbedded grainstones and packstones, with only streaky porosity, traces of fair fluorescence, stain and cut, continued to a measured depth of 5685', 5511' true vertical depth, with a horizontal displacement of 340' when the well bore encountered the top of the 1-A to Gothic Shale transition zone at the top of the Desert Creek.

At measured depth of 5704', 5510' true vertical depth, with a horizontal displacement of 360', to a measured depth of 5795', 5500' measured depth, with a horizontal displacement 444', the lateral was terminated in the black to dark gray brown, carbonaceous, dolomitic to very slightly calcareous Gothic Shale. The 1-A zone had thinned, with only two 2' thick porosity streaks and turned downward at a very sharp angle. In calculating the dip of the top of the Gothic Shale and the 1-A zone, it was determined that the top of the Gothic Shale and the top of the 1-A zone had dropped 23' over approximately 180' of horizontal displacement, with a calculated dip of 82 degrees. The lateral had been turned upward at a angle of 93 degrees in anticipation of finding a thick 1-A porosity zone.

After drilling into the Gothic Shale, the well was pulled back into the curve and side tracked at a measured depth of 5585', 5514.5' true vertical depth and a horizontal displacement of 242' in the tight dolomite packstones and thin dolomitic limestones in the 1-A to 1-B transition zone. The well bore was sidetracked and turned downward at an average angle of 80 degrees into the 1-B zone.

The top of the 1-B porosity zone was encountered at a measured depth of 5610', 5521' true vertical depth, with a horizontal displacement of 265'. The 1-B porosity was a brown to light brown, cryptocrystalline to very fine crystalline, granular, slightly limy, algal, cherty dolomite grainstone, with very thin interbedded tight dolomite packstone. As the well bore was continued at a steep downward angle, the dolomites became increasingly algal and crinoidal. As the well bore was continued downward in a northwesterly direction and turning in a more westerly direction, the top of the 1-B to 1-A transition zone was encountered, trending in a more northerly direction. The 1-B to 1-A boundary occurred at a measured depth of 5870', 5562' true vertical depth, with a horizontal displacement of 547'. The top of the 1-B zone was a very tight brown to tan, occasionally light gray, cryptocrystalline to very finely crystalline, occasionally micsurosic to slightly granular, limy dolomite packstone and very thin grainstones, with rare to trace of dull to bright fluorescence, stain or cut with very thin interbedded limestone packstones. The dolomites had scattered, thin intercrystalline to very slightly algal porosity. In the limestone the porosity was very poor, with no to very rare, faint fluorescence, very rare traces of very light brown stain and very rare black oil stain residue* in the very poor intercrystalline porosity and a very poor slow diffuse cut.

At 5945' measured depth, 5574' true vertical depth and a horizontal displacement of 593', an increase in brown to light gray to tan limestone packstone. The increase in limestone packstone with thin interbedded dolomite packstone and grainstone was due to a lateral and vertical facies change as the well bore penetrated the base of the 1-B to 1-A zone boundary. This lithology was continued to a measured depth of 6090', 5592' true vertical depth, with a horizontal displacement of 734'. As the well bore was slowly turned upward toward 85 degrees and turned slowly north a slight increase in tight dolomite packstones and thin dolomite grainstones was noted. The limestones and dolomites from a measured depth of 6030' to 6080', showed a slight increase in porosity and sample show , that was very similar to the porosity noted near the top of the 1-A zone noted in the curve section.

Thin light gray to off white to tan, very silty dolomite and limestone packstones which graded to limy and dolomitic, slightly sandy siltstones and trace of a carbonate sand, similar to the samples seen in the Desert Creek transition zone below the Gothic Shale were noted. The decision to terminate the lateral was made at a total measured depth of 6158', a true vertical depth of 5599.8' and a horizontal displacement of 803', on May 21, 1997. The lateral was terminated approximately 49' below the center of the proposed target line, in a very silty limestone and interbedded dolomite packstone.

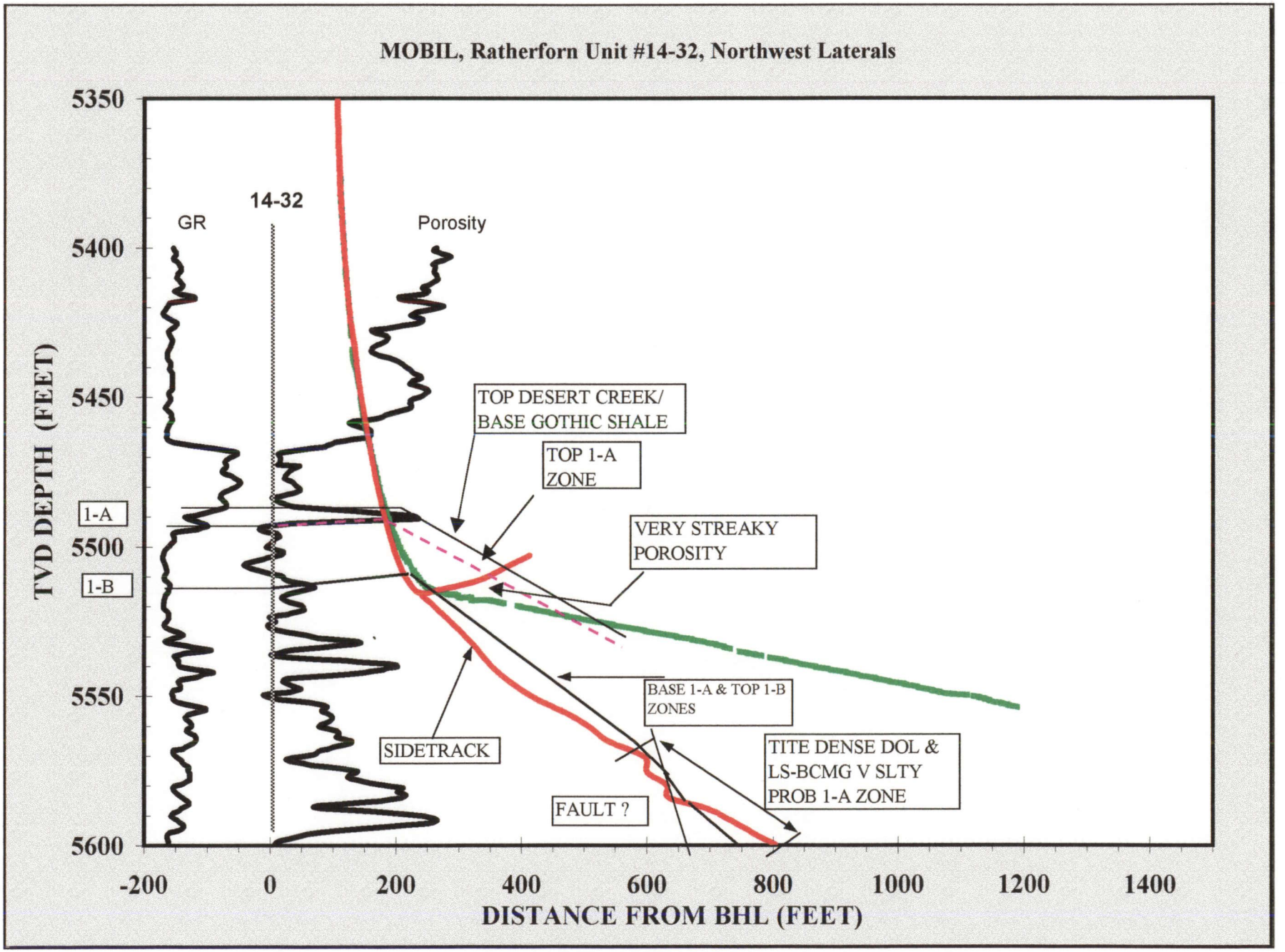
In tracking the well bore through the 1-A and 1-B benches, the dolomite porosity was lost very rapidly as the well dipped downward and dropped off the edge of the porosity platform, with only minor amounts of good porous dolomites noted in the 1-A and 1-B zones. No measurable amounts of oil were made while drilling the zones. Several facies changes were noted. The changes noted were vertical and horizontal. These changes were noted as the well bore encountered the top and base of the 1-A zone and the top of the 1-B zone. Of note is that it appears from the samples, direction and penetration rate, that the base of the 1-B zone was never encountered. The lateral, based on sample interpretation, was terminated in the top of the 1-A zone as the edge of the platform turned to a more north to south orientation. Another possible interpretation was the lateral had encountered a very silty limestone and dolomite to a very calcareous to dolomitic siltstone of a slump feature off the platform. The possibility exists for the zones being faulted, but the samples showed no indication of fault zones. Throughout the length of the lateral in both the 1-B and 1-A zones, it appears that both zones trended downward over the edge of the porosity platform at very steep angles and the porosity was lost very rapidly.

Predominant facies changes were associated with the vertical changes with in the dolomites and limestones within the 1-A and 1-B zones, changes between the zones and the lateral changes in the depositional environment as leg #1 in the 1-A and 1-B zones continued off the edge of the platform. Even with these classification changes, the slightly algal dolomites encountered were of varying thickness and were continuous through out the best porosity of the 1-B zone penetrated. However the porosity to the northwest in the 1-A zone, also in a dolomites were not continuous, as the dolomite facies became tight and graded downward to a dolomitic limestone off the platform. The effective or best porosity was associated with the algal dolomite grainstone facies, which had fair to good, intercrystalline to algal porosities, and the absence of any major anhydrite plugging. The limestone packstone at the top of the 1-B, and base of the 1-A zone had little or no porosity and much poorer permabilities. The limestone packstones and interbedded very thin dolomite grainstones noted from a horizontal displacement of 734' to 803' had poorer porosities than did the algal dolomite grainstones from a horizontal displacement of 265' to 515'.

The conclusion drawn from the southeasterly lateral in the 1-B and 1-A zones is that in this area the dolomite and limestone porosities were enhanced by presence of the algal material and the lack of anhydrite filling and cement. Also, having an effect on the porosity, was the very steep dips noted as the zone turned down off the platform edge. Staining was fair to good and there were significant sections where staining was very good, with some black dead oil staining trapped in the intercrystalline and algal porosity. The lateral used the proposed projected target line as a reference point through the bench, while the well bore attempted to follow the line of best porosity after entering the 1-B porosity bench.

While drilling the lateral, the high background gas due in part to the oil and water emulsion used as the drilling fluid, gradually decreased as well was continued downward the 1-B zone and then back into the 1-A zone. This lateral can be interpreted to have good reservoir qualities through the portion of the 1-B zone penetrated. It appears that the porosities are well enough developed to possibly enhance the overall performance of the 1-B zone.

*The black residual staining has been called by Dr. Dave Eby & others as "bitchimum" and is also known as "dead oil" ("dd o stn" on mud logs). This staining is associated with the movement of oil over long periods of time and is a good indicator of producable hydrocarbons when associated with productive porosities, but can also be found in porosities that have been filled by anhydrites and other material at later dates.


MOBIL, Ratherforn Unit #14-32, Northwest Laterals
5350
5400
5450
5500
5550
5600
TVD DEPTH (FEET)
14-32
GR
Porosity
1-A
1-B
TOP DESERT CREEK/
BASE GOTHIC SHALE
TOP 1-A
ZONE
VERY STREAKY
POROSITY
BASE 1-A & TOP 1-B
ZONES
SIDETRACK
TITE DENSE DOL &
LS-BCMG V SLTY
PROB 1-A ZONE
FAULT ?
-200
0
200
400
600
800
1000
1200
1400
DISTANCE FROM BHL (FEET)

MOBIL

RATHERFORD UNIT #14-32
SE HORIZONTAL LATERAL LEG#2
UPPER 1-A & 1-B POROSITY BENCHES
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 14, T41S, R23E
SAN JUAN, UTAH

GEOLOGY REPORT
by
JASON G. BLAKE
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

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WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #14-32 SE HORIZONTAL LATERAL LEG #2 IN 1-A/1-B UPPER POROSITY BENCH, DESERT CREEK
LOCATION:	SECTION 14, T41S, R23E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB:4595' GL:4607'
SPUD DATE:	5/22/97
COMPLETION DATE:	6/02/97
DRILLING ENGINEER:	KB:4595' GL:4607'
WELLSITE GEOLOGY:	JASON BLAKE / MARVIN ROANHORSE
MUDLOGGING: **ENGINEERS**	JASON BLAKE / MARVIN ROANHORSE
CONTRACTOR: **TOOLPUSHER:**	BIG "A" RIG 25 J. DEES /D. SIPE
HOLE SIZE:	4 3/4"
CASING RECORD:	SIDETRACK IN WINDOW AT 5268' MEASURED DEPTH
DRILLING MUD: **ENGINEER:** **MUD TYPE:**	M-I RON WESTENBERG/ DANNE BEASON FRESH WATER & OIL EMULSION W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	6891' MEASURED DEPTH TVD-5441'
STATUS:	TOH & LAY DOWN TOOLS - PREPARE TO MOVE RIG

DRILLING CHRONOLOGY
RATHERFORD UNIT #14-32
1-B/1-A SE HORIZONTAL LATERAL

DATE	DEPTH	DAILY	ACTIVITY
5/22/97	5261'	0'	TIH WITH WHIPSTOCK, SET @ 5380'. LD 12 JTS DP & TOH. LD SETTING TOOL & PU STARTER MILL, TIH & MILL 5261'-5262.5', PUMP SWEEPS & CIR OUT. TOH & LD STARTER MILL, PY WINDOW MILL & WATERMELLON MILL, TIH & MILL 5262.5'-5268'.
5/23/97	5268'	7'	TOH WITH MILL ASSEM & LD MILLS. PU MOTOR ASSEM & TIH, RU WIRELINE & RUN GYRO, TIME DRLG 5268'-5272', DRLG & SURVEYS 5272'-5323'. PULL GYRO & RIG DOWN WIRELINE. DRLG & SURVEYS 5323'-5352'.
5/24/97	5352'	84'	DIR DRLG & SURVEYS 5352'-5409',CO & SURVEY, LD 2 JTS DP, POOH FOR BIT #2, WORK ON TONGS, LD MWD & PU NE MWD, RE-ADJUST MOTOR PAD & TEST MTR & MWD. TIH W/ BIT #2, PU SWIVEL & 1JNT DP, BREAK CIRC, DRLG & SURVEYS
5/25/97	5544'	192'	DIR DRLG & SURVEYS- CIR BTMS UP @ 5671'-TOH-LAY DOWN CURVE ASSEMBLY-PICK UP LATERAL BHA & RR BIT #2-TIH-DIR DRLG & SURVEYS
5/26/97	5691'	147'	DIR DRLG & SURVEYS
5/27/97	5891'	200'	DIR DRLG & SURVEYS
5/28/97	6020'	129'	DIR DRLG & SURVEYS
5/29/97	6229'	209'	DIR DRLG & SURVEYS-LAY DOWN 5 JNTS & HANG SWIVEL & TOOH-LAY DOWN MTR #2,BIT #2 & CHANGE OUT MWD-PICK UP & MAKE UP NEW BIT #3,MTR & TEST-TIH-PICK UP SWIVEL & BREAK CIR
5/30/97	6306'	77'	SURVEY & CHANGE SURVEY MODES-DIR DRLG & SURVEYS
5/31/97	6420'	406'	DIR DRIG & SURVEYS
6/01/97	6720'	363'	DIR DRLG & SURVEYS
6/02/97	6853'	0'	DIR DRLG & SURVEYS-CIR SPLS @ 6891' & PUMP SWEEPS-DISPLACE HOLE W/FRESH WATER-LAY DOWN DRLG PIPE TO COLLARS-TOH-LAY DOWN LATERAL BHA-PICK UP RETRIVING HOOK-TIH-RETRIVE WHIPSTOCK-TOH LAYING DOWN PIPE-LAY DOWN WHIPSTOCK-START RIGGING DOWN RIG

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #14-32 SE 1-B/A HORIZONTAL LATERAL

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
5/22/97	5261'	0'			
5/23/97	5268'	7'			
5/24/97	5352'	84'			
5/25/97	5544'	192'			
5/26/97	5691'	147'			
5/27/97	5835'	200'			
5/28/97	6020'	129'			
5/29/97	6229'	209'			
5/30/97	6306'	77'			
6/01/97	6420'	114'			
6/02/97	6720'	300'			
6/03/97	6853'	133'			
TD	6891'	38'			

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 SE 1-B/A HORIZONTAL LATERAL

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1	4 3/4"	HTC	STR-30	5268'/ 5409'	141'	20.5	6.9
#2	4 3/4"	HTC	STR-30	5409'/ 6306'	897'	105	8.5
#3	4 3/4"	HTC	STR-30	6303'/ 6891'	585'	78.5	7.5

Customer ... : Mobil
Platform ... : RATHERFORD UNIT
Slot/Well .. 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICA SECTION	DOG LEG
5100	1.01	306.9	5097.38	45.62 N	122.21 W	-118.68	0
5261	0.56	325.28	5258.36	47.12 N	123.79 W	-120.85	0.32
5268	2.6	130.5	5265.36	47.05 N	123.69 W	-120.73	44.92
5288	6.6	127.26	5285.29	46.05 N	122.43 W	-119.14	20.03
5308	10.6	124.02	5305.07	44.33 N	119.99 W	-116.19	20.14
5328	14.3	120.78	5324.59	42.04 N	116.34 W	-111.99	18.82
5348	18.4	117.54	5343.78	39.31 N	111.42 W	-106.58	20.99
5368	22.8	114.3	5362.5	36.25 N	105.09 W	-99.94	22.72
5388	26.5	115	5380.67	32.77 N	97.51 W	-92.12	18.56
5408	31.4	114.7	5398.17	28.71 N	88.72 W	-83.04	24.51
5428	36.9	113.8	5414.71	24.1 N	78.49 W	-72.54	27.62
5448	42.5	115.3	5430.09	18.79 N	66.88 W	-60.58	28.41
5468	48.5	116.5	5444.11	12.55 N	54.06 W	-47.1	30.3
5488	53.2	121.6	5456.73	5.01 N	40.52 W	-32.19	30.7
5508	54.4	130.4	5468.56	4.47 S	27.49 W	-16.28	36
5528	56.6	135.4	5479.89	15.69 S	15.43 W	0.18	23.35
5548	60.4	132.7	5490.34	27.54 S	3.17 W	17.23	22.21
5568	63.6	131.3	5499.73	39.35 S	9.95 E	34.86	17.15
5588	66.5	130.7	5508.17	51.24 S	23.64 E	52.95	14.75
5608	71.5	131.2	5515.33	63.48 S	37.73 E	71.57	25.11
5628	77.7	131.8	5520.64	76.25 S	52.17 E	90.8	31.13
5648	84.9	133.8	5523.66	89.67 S	66.66 E	110.54	37.33
5671	91.2	133.2	5524.45	105.49 S	83.32 E	133.51	28
5691.05	91.9	134.6	5523.9	119.38 S	97.77 E	153.55	7.8
5722.87	93.8	135.2	5522.32	141.82 S	120.28 E	185.33	6.26
5754.69	93.6	135.7	5520.27	164.45 S	142.55 E	217.08	1.69
5785.86	93	135.5	5518.47	186.68 S	164.32 E	248.2	2.03
5817.64	93.8	136.6	5516.59	209.52 S	186.34 E	279.91	4.27
5849.46	92.1	135.9	5514.95	232.47 S	208.32 E	311.68	5.78
5880.1	90.9	135.7	5514.15	254.43 S	229.67 E	342.31	3.97
5911.85	91.7	136	5513.43	277.21 S	251.78 E	374.05	2.69
5943.65	92.8	136	5512.18	300.06 S	273.85 E	405.82	3.46
5975.38	93.7	136.2	5510.38	322.89 S	295.82 E	437.49	2.91
6007.21	94.5	136.4	5508.11	345.84 S	317.75 E	469.23	2.59
6038.95	94.6	136.6	5505.59	368.79 S	339.53 E	500.86	0.7
6070.81	95.5	136.4	5502.78	391.81 S	361.38 E	532.58	2.89
6102.53	95.9	136.9	5499.63	414.76 S	383.04 E	564.13	2.01
6134.35	96	137.5	5496.34	437.99 S	404.55 E	595.76	1.9

Customer ... : Mobil
Platform ... : RATHERFORD UNIT
Slot/Well .. 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICA SECTION	DOG LEG
6166.13	92.5	136.8	5493.98	461.22 S	426.1 E	627.42	11.23
6197.96	90.1	136.4	5493.26	484.34 S	447.96 E	659.23	7.64
6228.88	92.2	135.5	5492.64	506.55 S	469.45 E	690.14	7.39
6260.71	93.8	135	5490.97	529.13 S	491.83 E	721.92	5.27
6292.72	94.2	133.4	5488.74	551.39 S	514.72 E	753.85	5.14
6324.47	95.3	133.4	5486.11	573.13 S	537.71 E	785.48	3.46
6356.26	96.6	133.4	5482.81	594.85 S	560.68 E	817.09	4.09
6387.98	96.8	133.6	5479.11	616.54 S	583.53 E	848.58	0.89
6419.78	95.3	133.4	5475.76	638.3 S	606.47 E	880.19	4.76
6451.66	94.4	133.1	5473.07	660.07 S	629.61 E	911.94	2.97
6482.56	95.8	132.9	5470.32	681.06 S	652.12 E	942.7	4.58
6514.3	96.9	132.2	5466.81	702.39 S	675.36 E	974.21	4.1
6546.05	97.6	131.8	5462.8	723.47 S	698.76 E	1005.67	2.53
6577.77	97.1	130.8	5458.75	744.23 S	722.4 E	1037.06	3.5
6609.59	96.2	129.7	5455.06	764.65 S	746.52 E	1068.56	4.45
6641.26	94.6	128.1	5452.08	784.45 S	771.05 E	1099.91	7.13
6673.03	93.6	127.8	5449.81	803.93 S	796.04 E	1131.35	3.29
6704.21	92.4	127.8	5448.18	823.02 S	820.65 E	1162.25	3.85
6736	91.1	127.6	5447.21	842.45 S	845.79 E	1193.76	4.14
6767.8	91.3	127.8	5446.54	861.89 S	870.94 E	1225.3	0.89

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 SE 1-B/A HORIZONTAL LATERAL

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
5/22/97	5261'	8.0	29	2	2	0/0	11.7	6.4	<1/32	6500	120	–	23%	77%
5/23/97	5270'	8.1	29	2	2	0/0	11.6	6.2	NC	1800	60	–	20%	80%
5/24/97	5409'	8.1+	29	2	2	0/0	11.6	6.4	NC	2000	60	–	16%	84%
5/25/97	5657'	8.0	29	2	2	0/0	11.8	5.8	NC	2400	40	–	20%	80%
5/26/97	5721'	8.0+	29	2	2	0/0	11.8	7.2	NC	2300	40	–	20%	80%
5/27/97	5932'	8.1	29	2	2	0/0	11.8	7.2	NC	2200	60	–	18%	82%
5/28/97	6061'	8.0	29	2	2	0/0	11.8	6.8	NC	2300	80	–	18%	82%
5/29/97	6263'	8.1	29	2	2	0/0	12.0	7.8	NC	2300	80	–	14%	86%
5/30/97	6365'	8.1	29	2	2	0/0	12.0	8.8	NC	2200	80	–	12%	88%
5/31/97	6555'	8.2	29	2	2	0/0	12.0	10.0	NC	2200	80	–	10%	90%
6/01/97	6767'	8.1	29	2	2	0/0	11.6	10.0	NC	2200	80	–	15%	85%
6/02/97	6885'	8.1	29	2	2	0/0	11.8	10.0	NC	2300	60	–	15%	85%

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 SE 1-B/A HORIZONTAL LATERAL

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4607'
PARADOX SHALE		5297'	5295'	-688
UPPER ISMAY		5302'	5300'	-693
LOWER ISMAY		5433'	5418'	-811
GOTHIC SHALE		5498'	5462'	-855
DESERT CREEK		5517'	5472'	-865
DC 1-A		5522'	5477'	-870
DC 1-B		5592'	5509'	-902
DC 1-B / 1-C transition		5680'	5524.2	-917.2
DC 1-C / 1-B transition		6102'	5499.6'	-892.6
DC 1-B / 1-A transition		6476'	5470'	-863

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #14-32 Horizontal Lateral Leg 2 was a re-entry of the Mobil Ratherford Unit #14-42 located in Section 14, T41S, R23E, and was sidetracked in a southeasterly direction from a 5251' measured depth, 5398.2' true vertical depth, on May 22, 1997. The lateral reached a measured depth of 6891', true vertical depth of 5441.6' at total depth, with a horizontal displacement of 1347' and true vertical plane 123.9 degrees, on June 2, 1997. The lateral was drilled with no problems. This leg was drilled using fresh water and oil emulsion with polymer sweeps as the drilling fluid. Also a bit trip was made at a measured depth of 6306' to check the bit and mud motor, as well as to add more drill pipe below the collars.

The primary objectives of the Ratherford Unit #14-32 Leg 2 horizontal lateral were the upper 1-B and 1-A porosity benches of the Desert Creek to identify and define the porosity benches, the effective porosity, staining and reservoir properties in both 1-B and 1-A zones of the Desert Creek Member of the Upper Paradox Formation.

The Upper Ismay, Lower Ismay, Gothic Shale, the transition zone at the top of the Desert Creek, as well as the 1-A and 1-B porosity benches were encountered while drilling the curve section of the lateral. Kick off point for this lateral was just above the top of the Upper Ismay in the basal carbonates of the Honaker Trail.

The base of the Honaker Trail Formation of the Upper Hermosa Group was gray to dark gray, cryptocrystalline to microcrystalline, dense, slightly argillaceous dolomite. Thin interbeds of tan to light gray brown, very fine to microcrystalline limestones were present through the section. There was no, to visible porosity or fossils in the lower Honaker Trail, with no sample shows or gas increases. The dolomites at the base of the Honaker Trail graded into the medium gray to dark graybrown, carbonaceous, dolomitic, micaceous shale at the base locally referred to as the Paradox Shale.

The Upper Ismay was picked at a measured depth of 5302' (5300' TVD) at the base of the Honaker Trail. The Upper Ismay was predominately light gray to cream to tan, occasionally brown, micro to cryptocrystalline, chalky, cherty occasionally fossiliferous limestone. Minor amounts of silty limestone grading to very limy siltstone, with very thin interbedded argillaceous, brown to gray brown, microcrystalline to microsucrosic dolomite were present as well as minor amounts of very thin black, carbonaceous, slightly calcareous to dolomitic shale, and scattered brown to black to translucent chert fragments. There little visible porosity in the Upper Ismay, with only a few zones of poor intercrystalline porosity with very slight stain, fluorescence and cut and no associated gas increases. The dolomites at the base of the Upper Ismay graded into the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5433' measured depth, 5418' true vertical depth, at the base of the very thin Hovenweep shale. The Lower Ismay was predominately a cream to tan to light gray brown limestone, microcrystalline to cryptocrystalline, microsucrosic to granular, slightly silty to clean, slightly cherty with a trace of scattered micro fossils. Very little to no intercrystalline porosity, with no visible fluorescence, stain or cut was present in the limestone. Interbedded in the

limestones were scattered light to dark brown, thin dolomites which were cryptocrystalline to microcrystalline, earthy to clean, with poor to fair intercrystalline porosity, even dull yellow fluorescence, even light brown stain and a fair to good streaming cut. The limestones in the base of the Lower Ismay were very thin mottled gray to gray brown, cryptocrystalline to microcrystalline, and clean to argillaceous. The basal limestones graded into the Gothic Shale.

The top of the Gothic Shale was at 5498' measured depth, 5462' true vertical depth. The Gothic Shale was predominantly dark gray to black, silty, carbonaceous, brittle to firm, subblocky to blocky to platy, calcareous to slightly dolomitic and slightly micaceous. The top of the Gothic was gradational from the very thin interbedding of very argillaceous, carbonaceous limestone and very argillaceous, limy dolomite, with the dolomite grading into very dolomitic, carbonaceous shale. The top of the Gothic was picked predominantly by the decrease in penetration rate and a distinct increase in the percentage of shale in the samples.

Between the Gothic Shale and Desert Creek Porosity Members is a transitional zone, which appears to be gradational. The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in this leg occurred at a measured depth of 5517' and a true vertical depth of 5472'. In this well the zone was predominantly a very silty, dolomitic limestone; which was cream to tan, some gray to white to brown to dark brown, cryptocrystalline to microcrystalline, argillaceous, with very rare intercrystalline porosity, but only very spotty dull mineral fluorescence, and visible stain or cut. Of note was the abundant black asphaltic tar in the samples from above the Gothic Shale through the transition zone. The limestones graded into and had cyclic deposits of very thin dolomite packstones and dolomitic to slightly calcareous, light to medium gray, silty claystones. The limestones graded into the porosity of the 1-A zone.

The top of the Desert Creek 1-A zone was picked at 5522' measured depth, 5477' true vertical depth. The pick was based primarily on sample identification, as the penetration rate was quite erratic through the upper part of the zone due to drilling parameters. The top was picked in this lateral based on the first slightly algal dolomite grainstone porosity below the Desert Creek top and thinly interbedded slightly silty and limy dolomite grainstones near the top and at the base of the zone. The dolomite was predominately very granular with intercrystalline to rare algal porosity and very rare scattered chert fragments. The zone exhibited fair to good fluorescence, brown stain and a moderately fast cut.

The top of the Desert Creek 1-B zone was picked at a measured depth of 5592', true vertical depth of 5509'. The pick was based on a decrease in rate of penetration between the 1-A and 1-B zones and sample identification. The top in this lateral was a tight, very cherty dolomite and limestone packstone between the 1-A and 1-B zones. Below this transition, the zone was a brown, slightly algal dolomite grainstones grading to packstone with common to abundant dark gray to black chert interbedded with thin tight limestones. The dolomite was predominately granular with streaks of fair to good intercrystalline to a trace of algal porosity, a trace to good fluorescence, light brown stain and a slow to very slow streaming cut. The thin limestones noted had no visible porosity, fluorescence, stain or cut.

The curve was landed in the lowermost porosity bench of the 1-B zone. The dolomites in this lowermost bench became increasingly granular and algal with a slight increase in stain, fluorescence and cut. It appears that the 1-B porosity bench is possibly defined by the interval 5594' measured depth, 5512' true vertical depth to 5528' true vertical depth. The top of the porosity bench was marked by a gradational facies change as the drill rate increased rather slowly. The base of the porosity zone is estimated, as it was not encountered while landing the curve.

At a measured depth of 5671', 5524.7' true vertical depth, with a horizontal displacement of 133.51' a trip was made to change the bottom hole assembly. Upon resumption of drilling in the lateral section, the well bore was drilled at a very slight upwards angle and encountered a limy

dolomite which was light gray, microcrystalline, dense to chalky textured and very argillaceous. This was interpreted to be the transition zone between the 1-B and 1-C zones. At a measured depth of 5930 through 5970 (TVD 5913'-5910') a tan to brown cryptocrystalline limestone, slightly cherty was drilled. This appears to be the very top of the 1-C zone. The wellbore was being drilled at a more aggressive angle up (93-95°) during this section, well above the target line. This suggests that the structure at the base of the 1-B has more dip that originally interpreted. From 5970' MD, 5510' TVD, through 6110' MD, 5499.6' TVD, the light gray argillaceous calcareous dolomite was once again penetrated. Very little to no porosity, stain, fluorescence or cut was noted through this 1-B to 1-C transition zone.

As the well bore was continued upward from a measured depth of 6110', 5499.6' true vertical depth, to a measured depth of 6150', 5494' measured depth, with a horizontal displacement 515', the lateral encountered 2 streaks of porosity in a sucrosic dolomite grainstone, with a good sample show. At 6150' measured depth the lateral encountered a tight, very dense, cherty dolomite packstone to wackstone, which turned the drill bit from a 96 degree angle to a 90 degree angle. As the well bore was slowly turned back upward the upper most of the 2 previously noted porosity streaks was again drilled from a measured depth of 6180', 5493.5' true vertical depth, a horizontal displacement of 640' to a measured depth of 6223', 5492.5' true vertical depth, and a horizontal displacement of 675'. This one foot thick porosity was in a light brown, microsucrosic, dolomite grainstone with a very good sample show.

From a measured depth of 6223' to 6364' measured depth, 5482' measured depth, 826' of horizontal displacement, the well bore was continued upward at an increasing angle, back up to 96 degrees. The lithology was predominately a light brown to brown to gray brown, very tight, cherty, limey dolomite packstone, with very thin interbedded dolomite grainstone and white to off-white, dolomitic, cherty, platy limestone grainstone. At a measured depth of 6306', 5487' measured depth, with a horizontal displacement of 768', a trip was made to change bits and check the bottom hole assembly.

At a measured depth of 6364' to a measured depth of 6394', 5479' true vertical depth, and a horizontal displacement, a 2.5 foot thick streak of porosity was drilled. The porosity was in a thin brown to light brown, micsucrosic, and slightly algal dolomite grainstone, with a fair sample show. The angle was lowered after drilling out the top of the porosity, in an attempt to require the porosity. As the drilling was continued from 6394' to 6476' measured depth, 5471' true vertical depth and a horizontal displacement of 937', the lithology was predominately a tight microcrystalline to occasionally granular, very slightly algal dolomite packstone, very thin granular to microsucrosic, algal dolomite grainstones and platy, tight, slightly dolomitic limestone packstone. The dolomite and limestone packstones had no to very poor visible porosity, with no visible sample show. The algal dolomite grainstones had a trace to fair sample show and porosity. The bore hole, after not reacquiring the porosity streak was continued upward at a 95 to 96 degree angle.

As the well bore was continued upward from a measured depth of 6476', 5471' true vertical depth, to a measured depth of 6481', 5470' measured depth, with a horizontal displacement from 943', the lateral penetrated the transition zone between the 1-B and the 1-A zones. The transition zone was a tan to brown to dark brown, cryptocrystalline to very fine crystalline, occasionally granular, slightly limy, very cherty dolomite packstone, and had varying amounts of light brown to dark smoky gray brown chert fragments. Near the top of the transition zone were tight thin interbedded limestone packstones, with no fluorescence, stain or cut, with intbedded tight dolomites. The dolomites had no to very rare intercrystalline porosity. The fluorescence was poor with no visible stain and a poor slow cut. The return to dolomite packstone and very thin grainstone of the 1-A zone, as the well bore was continued upward, was at a measured depth of 6502', 5468' true vertical depth, and a horizontal displacement of 962'. The transition zone appeared to be approximately 6' thick.

The well bore continued upward through the 1-A zone in light brown to brown, cryptocrystalline to very finely crystalline dolomite packstone and very thin dolomite grainstone. These dolomites were occasionally cherty, with scattered thin dolomitic, platy limestone packstones, and had a trace to rare intercrystalline, poor to a trace of dull yellow fluorescence, rare light brown to brown stain, some very rare black dead oil stain, and a poor slow diffuse to rare slow streaming cut. This lithology was continuous to a measured depth of 6610', a true vertical depth of 5455', and a horizontal displacement of 1068', when a thin porosity streak in the 1-A zone was encountered. This porosity zone was approximately 3' thick and was from 6610' to a measured depth of 6650', 5452' true vertical depth, with a horizontal displacement of 1109'. The porosity was in a light brown, to occasionally brown, cryptocrystalline to very finely crystalline, very slightly algal dolomite grainstone, with rare scattered chert fragments and thin interbedded dolomite and platy limestone packstones. The dolomites showed an increase in sample shows. The fluorescence, stain and cut increased to a trace to fair. The well bore was tracking the target line, and was turned slowly downward toward the horizontal to try to require the best porosity in the 1-A zone.

As the well bore was turned downward to reacquire the porosity, the lithology returned to predominately a very cherty, limy, light brown dolomite packstone with very thin, interbedded dolomite grainstone and platy limestone fragments. This lithology was encountered from a measured depth of 6650', 5452' true vertical depth, a horizontal displacement of 1109' to a measured depth of 6891', 5441' true vertical depth and a horizontal displacement of 1347'. These dolomites predominately light to medium brown, microcrystalline to cryptocrystalline, rarely very finely crystalline to microsucrosic, with very rare scattered anhydrite crystals and traces of chert fragments. The dolomites had trace to very poor to no intercrystalline porosity, fair to poor dull yellow fluorescence, a spotty light brown stain, very poor spotty black dead oil stain and a poor to a trace of very slow diffuse to rare poor slow streaming cut.

At a total measured depth of 6891', a true vertical depth of 5441' and a horizontal displacement of 1347'; the lateral was terminated on June 2, 1997. The lateral was terminated at approximately 1' below the center of the proposed target line, in a very tight, slightly limey dolomite packstone.

In tracking the well bore through the 1-B bench, the dolomite porosity was very thin and streaky. As the well bore approached the top of the 1-B zone and penetrated the transition zone between the 1-B and 1-A zones, a facies change was noted. The change noted was vertical, from the dolomite grainstones to a tight, very cherty, limey dolomite and dolomitic limestone packstone. As the well bore approached the base of the 1-A zone the lithology returned to a very tight dolomite packstone and rare, slightly algal dolomite grainstones with thin interbedded platy, dolomitic limestone packstones. Tracking well bore through the 1-A zone, vertical facies changes were noted as the well bore was drilled upward through the 1-A zone. These changes were from a tight dolomite packstone to a thin dolomite grainstone and then back to very tight dolomite packstone with thin platy limestone packstone, as the well bore was continue upward to follow the target line. In tracking the lateral through out it's length both the 1-B and 1-A zones, it appears that both zones trended upward toward the 13-24 well.

Predominant facies changes were associated with the vertical changes with in the dolomites and the changing of zones and the lateral change in depositional environment, as the environment of deposition changed when encountering the top 1-B zone and the base of the 1-A zone. With the classification changes, the slightly algal dolomites encountered were predominately thin, of 3' or less in thickness and were not continuous through the 1-B and 1-A zones penetrated. The effective or the better porosity was associated with the very thin, slightly algal dolomite grainstone facies which had fair to good, intercrystalline to occasionally algal porosities, and the absence of any major anhydrite plugging. The limestone packstone at the top of the 1-B, and base and top of the 1-A zone had little or no porosity and much poorer permabilities. The dolomite packstones and thin interbedded grainstones

noted from a horizontal displacement of 6710' to 6891' had much poorer porosities than did the lower dolomites of the 1-A zone.

From the top of the 1-B porosity bench to a measured depth of 6235', the dolomite lithology appeared to be consistent, ranging from light brown to medium brown, cryptocrystalline to very finely crystalline, occasionally microsucrosic to granular, with thin platy limestone packstone and an increase in chert as the well bore penetrated the 1-B to 1-A transition zone. The dolomites had streaks of fair to good intercrystalline and a slight trace of algal porosity, scattered good dull to bright yellow fluorescence, with noticeable decreases when at the top of the zone. The staining in the dolomites ranged from none to fair light brown to rare scattered traces of black dead oil stain and the associated cuts being a trace to fair moderately fast to slow streaming cuts. In the 1-A porosity zone, the dolomites in the thin streaks of porosity, had rare to fair intercrystalline and very rare algal porosity, a trace of fair dull to bright yellow fluorescence, with rare to poor oil staining and a trace of spotty fair cut. The very thin platy limestones at the base of the 1-A lateral had no visible porosity, fluorescence, staining, or cut. The samples shows were affected in part due to the oil & water emulsion used as the drilling fluid through out the curve and lateral sections, along with the oil added to the system while drilling the lateral.

The conclusion drawn from the southeasterly lateral in the 1-B and 1-A zones, is that in this area the dolomite porosities were streaky, thin and not very consistent through the zones. Also, having and effect on the porosity, was the major amounts of tight dolomite packstone with very thin, platy limestone packstones near the top 1-B and the base of the 1-A of the lateral. Staining was rare to poor and there were significant sections where staining was fair to good, with some black dead oil staining trapped in the intercrystalline porosity. The lateral used the a proposed projected target line as a reference point through the 1-B and 1-A benches, with the well bore planing to following the line of best porosity after entering the 1-A porosity bench.

While drilling the lateral, the high background gas was due in part to the oil and water emulsion used as the drilling fluid, as well as the oil added periodical encountered in the lateral. A slow drop in the background gases was noted through most of the 1-B and 1-A zones. This lateral can be interpreted to have no to very poor, streaky reservoir qualities through out. It appears that the porosities are not well enough developed, in this southeasterly direction to enhance the overall performance of the zones.

*The black residual staining has been called by Dr. Dave Eby & others as "bitchimum" and is also known as "dead oil" ("dd o stn" on mud logs). This staining is associated with the movement of oil over long periods of time and is a good indicator of producable hydrocarbons when associated with productive porosities, but can also be found in porosities that have been filled by anhydrites and other material at later dates.

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #14-32 SE 1-B/A HORIZONTAL LATERAL

DEPTH	LITHOLOGY

5268.00 5280.00 pr smp-pred cem & lcm, DOL,gr-brn,dens,hd,vfn-micxln,sl argl,LS,tn-gr brn,mic-crpxln,dens,;NFSOC

5280.00 5290.00 DOL grd to LMY DOL,gr-gr brn,vfn-micxln,dens,LS,lt brn-gr,mic-crypxln,dens,rr CHT,tn,trans;NFSOC

5290.00 5300.00 SH dkgybrn-dkgy-blkgy,occ blk,sbblky-sbplty,slty,calc-sl dol ip,occ grdg to shy DOL ip,w/ tan-brn LS,crpxl,sl arg-shy ip,NFSOC

5300.00 5310.00 LS tan-crm-off wh,occ ltgybrn,crpxl-micxl,occ vfxl,chky-cln,occ rthy/rr slty strk,tr vf gr qtz incl,v sl dol ip,rr xln ANHY incl,tt-tr intxl POR,tr scat mod dull yel FLOR,rr ltbrn STN,g fast strmg CUT

5310.00 5320.00 DOL mbrngy-brn,occ ltbrngy,micxl-micsuc,rthy,v sl slty,pred DOL GRNST,tt-tr intxl POR,p-rr v dull yel-orng FLOR,no-tr brn STN,no CUT

5320.00 5340.00 LS tan-crm-off wh,occ ltgybrn,crpxl-micxl,occ vfxl,chky-cln,occ rthy/rr slty strk,tr vf gr qtz incl,v sl dol ip,rr xln ANHY incl,tt-tr intxl POR,tr scat mod dull yel FLOR,rr ltbrn STN,fr-g mod fast strmg CUT

5340.00 5350.00 LS AA w/ scat dkbrn CHT frag,tr scat DOL AA,tt-tr intxl POR,tr-rr scat dull yel FLOR,tr ltbrn-rr brn STN,n-rr res ring CUT

5350.00 5360.00 LS,crm-tn-brn,mic-crypxln,dens,sl argil,rr foss, scat CHT,dk brn, rr SHL,dk gr,sub-blky,carb;NFSOC

5360.00 5370.00 LS aa,crm-tn-brn,mic-crypxln,dens,sl argil,rr foss, scat dl brn CHT, rr SHL,dk gr,sub-blky,carb;NFSOC

5370.00 5380.00 LS,crm-tn-brn,mottled,mic-vfnxln,dns-sl chky tex ip,foss ip,blk carb ptgs ip,rr CHT,brn-dk brn,transl;scat FLOUR,vsl intrxln POR,no vis STN,vsl strm CUT

5380.00 5390.00 LS aa,crm-tn-brn,mottled,mic-vfnxln,dns-sl chky tex ip,foss ip,blk carb ptgs ip,scat CHT,brn-dk brn,transl;NFSOC

5390.00 5400.00 LS,crm-tn-brn,mic-crypxln,dens-sl chky ip,foss,argil ip,scat tn-brn CHT;NFSOC

5400.00 5410.00 LS tan-crm-brn,ltgy-gybrn,occ mgybrn,crpxl-micxl,occ micsuc,rthy,tr slty strk,sl chk,vrr mic fos,perd LS PCKST/tr GS,fr-tr intxl POR,g-fr scat even dull-mod bri yel FLOR,rr-n ltbrn STN,vp res ring CUT

5410.00 5420.00 SH dkgyblk-brnblk-blk,sbblky-sbplty,sl-occ v calc,sl slty,occ intbd/dk brn crpxl LS,pred carb,sooty,poss cvgs

5420.00 5430.00 LS wh-crm-tan,ltgybrn,occ ltbrn,crpxl-micxl,occ micsuc-gran,pred LS PCKST/scat GRNST,cln-occ sl mot,chk,tr trnsl-clr vf gr QTZ incl,tr mic & GAST fos,tr-fr intxl POR,fr scat even-spty dull-mod bri yel FLOR,p-tr v slow dif CUT

DEPTH	LITHOLOGY

5430.00 5440.00 LS AA-POR-FLOR-STN-CUT AA

5440.00 5450.00 LS crm-tan-wh,ltgy-ltgybrn,micxl-crpxl,occ micsuc-gran,cln,sl mot ip,occ chky plty prtgs,mic fos,tr tan-brn CHT,rr trnsl xln ANHY,fr-tr intxl POR,fr-g scat mod bri yel FLOR,tr ltbrn/vrr blk STN,p dif CUT

5450.00 5460.00 LS AA incr ltgy-ltgybrn,micxl-crpxl,occ micsuc-gran,cln-mot ip,rr mic fos,tr CHT AA,rr ANHY AA,fr-tr intxl POR,fr-g scat mod bri yel FLOR,tr ltbrn/vrr blk STN,p dif CUT

5460.00 5470.00 DOL tan-ltbrn,micsuc-gran-micxl,rthy,v slty,tr vf gr QTZ-sil incl,pred DOL GRNST,tr-fr intxl POR,g even dull yel FLOR,fr-g ltbrn STN,fr slow strmg mlky CUT

5470.00 5480.00 LS ltgy-crm-ltgybrn,micxl-crpxl,occ micsuc-gran,cln,sl chky,tr trnsl xln ANHY incl,tt-tr intxl POR,tr-fr scat spty dull-mod bri yel FLOR,no-tr ltbrn/vrr blk STN,vp dif-res ring CUT

5480.00 5490.00 SH blk-dkbrnblk-dkbrn,plty-splty-sbblky,frm,sl slty,tr pp mica,carb,sl-occ v calc,occ sl dol ip,sooty

5490.00 5500.00 DOL tan-ltbrn,micsuc-gran-micxl,rthy,v slty,tr vf gr QTZ-sil incl,pred DOL GRNST,tr-fr intxl POR,g even dull yel FLOR,fr-g ltbrn STN,fr slow strmg mlky CUT

5500.00 5510.00 SH blk-dkbrnblk-dkbrn,plty-splty-sbblky,frm,sl slty,tr pp mica,carb,sl-occ v calc,occ sl dol ip,sooty

5510.00 5520.00 SH AA/occ scat crm-wh crpxl LS & DOL AA

5520.00 5530.00 DOL tan-ltbrn,occ brn-dkbrn,micsuc-micxl-gran,occ crpxl,DOL GRNST/occ scat PCKST,sl sdy-slty ip,rr trnsl-clr xln ANHY,vrr dkbrn CHT frag,w/ SH AA,g intxl-tr vug POR,g even scat mod bri yel FLOR,g-fr ltbrn/tr dkbrn STN,fr mod fast strmg CUT

5530.00 5540.00 DOL AA,POR,fr mod bri-dull yel FLOR-STN AA,fr-g dif/tr slow strmg CUT

5540.00 5550.00 DOL AA,incr crpxl,pred DOL GRNST/scat intbd PCKST,tr dkbrn CHT,rr clr-trnsl xln ANHY,occ scat trnsl-ltgy gran LS prtgs,g intxl/rr vug POR,g-fr even mod bri-dull yel FLOR,g brn/tr dkbrn STN,fr dif/tr slow strmg CUT

5550.00 5560.00 DOL AA,POR-FLOR-STN-CUT AA

5560.00 5570.00 DOL AA,DOL GRNST/tr scat PCKST,occ ANHY incl AA,POR-FLOR-STN AA,mod fast strmg CUT

5570.00 5580.00 DOL GRNSTN,lt brn-brn,fnxln,suc,scat lt brn DOL PCKSTN,scat brn CHT;even dull yel STN,fr intrxln POR,sl-fr strm-diff CUT

5580.00 5590.00 DOL GRNSTN,brn-lt brn AA,incr tn-lt brn DOL PCKSTN,scat tn-ltbrn CHTAA;even dull yel FLOUR,STN AA,sl strm-diff CUT,decr POR

5590.00 5600.00 pred DOL PCKSTN,tn-crm-lt brn,vfn-micxln,dens,scat DOL GRNSTN AA,scat tn CHT;decr FLOUR,STN,CUT AA

5600.00 5610.00 DOL PCKSTN,lt brn,micxln,dens,LS,tn-lt gr brn,micxln,dens,sl foss,com-abund dk CHT;spt dull FLOUR,no vis POR,scat brn STN,sl strm CUT

DEPTH	LITHOLOGY

5610.00 5620.00 DOL PCKSTN AA grd to GRNSTN ip,decr LS AA,abund dk brn-blk CHT;scat dull FLOUR,fr intxln POR,brn STN,vsl strm-fr resid CUT

5620.00 5630.00 DOL GRNSTN,brn,fn-vfnxln,suc to den ip,decr LS & CHT AA;fr intrxln POR,lt brn STN,bri yel FLOUR,vsl CUT

5630.00 5640.00 DOL GRNSTN,brn,fn-vfnxln,suc to den ip,decr LS & CHT AA;fr intrxln POR,lt brn STN,bri yel FLOUR,vsl CUT

5640.00 5650.00 DOL PCKSTN grd to GRNSTN,brn-lt brn-tn,vfn-micxln,dens-suc ip,scat LS AA,scat-com tn-blk CHT;pr POR,patchy lt brn STN,dull-bri FLOUR,vsl CUT

5650.00 5660.00 DOL PCKSTN grd to GRNSTN,lt brn-brn,vfn-mic xln,suc-dens ip sl foss ip,LS,crm-tn,micxln,dens,sl argil,scat gr-dkgr transl CHT;pr-fr POR,lt brn STN,dull FLOUR,sl-vsl strm CUT

5660.00 5670.00 smp AA w incr DOL GRNSTN AA,decr LS & CHT,pr-fr intrxln POR,even brn STN,spotty FLOUR & sl CUT AA

5680.00 5690.00 "DOL AA,POR AA,tr scat dull-mod bri yel FLOR,STN AA,v fnt res ring CUT"

5690.00 5700.00 "DOL ltgybrn-ltgy,occ ltbrn-tan,micxl-micsuc-gran,occ crpxl-vfxl,rthy,pred DOL GRNST/incr chky lmy cmt & plty mot prtgs,tr PCKST,tt-tr intxl POR,rr scat dull-mod bri yel FLOR,rr-tr ltbrn STN,tr dif CUT"

5710.00 5720.00 "pred LMY DOL grd to DOL LS AA,gr-lt gr,argil,minor DOL PCKSTN,tn-lt brn,vfn-micxln,dens-sl suc;scat brn STN,dull FLOUR,pr intrxln POR,vsl-no CUT"

5720.00 5730.00 "LMY DOL grd DOL LS AA, sl incr DOL PCKSTN AA bcm sl foss ip;minor STN,FLOUR,POR & CUT AA"

5730.00 5740.00 "DOL PCKSTN & intrbd LS,crm-tn-lt brn,vfn-micxln,dens-sl suc ip,rr dk gr-blk CHT;sptty dk brn STN,dull-bri FLOUR,rr ppt-intrxln POR,vsl strm-diff CUT"

5740.00 5750.00 "pred LMY DOL grd to DOLO LS,gr-lt gr,argil,minor DOL PCKSTN,tn-lt brn,vfn-micxln,dens-sl suc;scat brn STN,dull FLOUR,pr intrxln POR,vsl-no CUT"

5750.00 5760.00 "pred LMY DOL grd to DOLO LS AA,gr-lt gr,argil,minor DOL PCKSTN,tn-lt brn,vfn-micxln,dens-sl suc;scat brn STN,dull FLOUR,pr intrxln POR,vsl-no CUT"

5760.00 5770.00 "argil LS,lt gr,micxln,dens-chky,DOL PCKSTN,tn-lt brn,vfnxln,dens-sl suc;dull-bri yel FLOUR,scat brn stn,pr-fr POR,fr stm CUT"

5770.00 5780.00 "DOL PCKSTON grd to GRNSTN,tn-lt brn,vfnxln,dens-suc,LS,lt gr,dens,argil AA;fr brn stn in DOL,fr intrxln POR,bri FLOUR,fr-gd strm-flash CUT"

5780.00 5790.00 "DOL PCKSTON grd to GRNSTN,tn-lt brn,AA,LS,lt gr,dens,argil AA;fr brn stn in DOL,fr intrxln POR,bri FLOUR,fr-gd strm-flash CUT"

5790.00 5800.00 "DOL PCKSTN grd to GRNSTN,lmy ip,vfn xln,suc-dens,LS gr-lt gr,dens,argil,chky ip;pr-fr intrxln POR,spty STN,spty FLOUR,sl stm CUT"

DEPTH	LITHOLOGY

5800.00 5810.00 "DOL PCKSTN grd to GRNSTN,lmy ip,vfn xln,suc-dens,LS gr-lt gr,dens,argil,chky ip;pr-fr intrxln POR,spty STN,spty FLOUR,sl stm CUT"

5810.00 5820.00 "DOL PCKSTN grd to GRNSTN ip,limy ip grd to LS,gr-tn-brn,vfn-mic xln,dens-suc ip;vsl STN,pr-fr intrxln POR,dull yel FLOUR,sl strm-diff CUT"

5820.00 5830.00 "LS ltgybrn-crm-ltgy,mot,occ wh,crpxl,occ micxl,arg-sl slty,sl chky,occ intbd/DOL AA,tr vfxl xln ANHY incl,tt-tr intxl POR,tr-fr mod bri yel FLOR,no vis STN,tr v fnt res ring CUT"

5830.00 5840.00 "DOL tan-ltgybrn,occ ltbrn,brn,micsuc-vfxl-micxl,gran,occ crpxl,DOL GRNST/tr chky lmy cmt & plty prtgs,occ sl lmy-grdg to dol LS ip,cln,tt-tr intxl POR,tr scat v dull yel FLOR,tr ltbrn STN,no CUT"

5840.00 5850.00 "SH blk,plty-sbsplty,frm,v carb,poss cvgs/pred DOL GRNST AA/decr scat LS AA,POR-FLOR-STN-CUT AA"

5850.00 5860.00 "DOL AA,pred DOL GRNST/decr scat SH,tr scat LS AA,POR-FLOR-STN-CUT AA"

5860.00 5870.00 "DOL tan-ltgybrn-trnsl,occ brn,vfxl-micsuc-micxl,gran,DOL GRNST/tr chky lmy cmt & plty prtgs,tr scat PCKST,occ grdg to dol LS ip,tr ltbrn CHT,rr trnsl xln ANHY,v fnt dull yel FLOR,tr ltbrn STN,v fnt res ring CUT"

5870.00 5880.00 "LS ltgybrn-crm-ltgy,mot,occ wh,crpxl,occ micxl,arg-plty,chky,occ intbd/DOL AA,tr vfxl xln ANHY incl,tt-tr intxl POR,tr-fr mod bri yel FLOR,no vis STN,tr v fnt res ring CUT"

5880.00 5890.00 "DOL AA,pred DOL GRNST,incr scat LS AA,POR-FLOR-STN-CUT AA"

5890.00 5900.00 "DOL tan-ltgybrn-trnsl,occ brn,vfxl-micsuc-micxl,gran,DOL GRNST/tr chky lmy cmt & plty prtgs,tr scat PCKST,incr LS AA,tr ltbrn CHT,POR-FLOR-STN,tr v fnt res ring CUT"

5900.00 5910.00 "LMY DOL grd to DOLO LS ip,lt gr,micxln,chky-dens-sl sndy tex,argil;no vis POR,no STN,dull yel FLOUR,vsl-no cut"

5910.00 5920.00 "LMY DOL grd to DOLO LS AA,gr,sft,chky-grny tex,argil;vsl-no shows AA"

5920.00 5930.00 "pred LMY DOL,lt gr AA, scat DOL PCKSTN,gr-tn-lt brn ip,vfn-mic xln,dens-sl suc ip;scat brn STN,dull FLOUR,pr intrxln POR,fr strm CUT"

5930.00 5940.00 "DOL PCKSTN,tn-brn,micxln,dens-sl suc ip,abunt LMY DOL,gr AA,rr-scat brm trnsl CHT;com brn STN,vsl-no vis POR,dull-bri yel flour,fr-gd stm CUT"

5942.00 5950.00 "DOLO LS,tn-lt brn,micxln,dens,scat DOL GRNSTN,brn,vfnxln,suc;scat STN,FLOUR,&CUT"

5950.00 5960.00 "LMY DOL,lt gr,micxln,dens,sft,ckky,argil,LS,brn,hd,dens,micxln;no vis POR,pos sl stn,fr bri FLOUR w diff CUT (contam?)"

5960.00 5970.00 "LS,tn-brn,hd,dens,micxln,DOL PCKSTN,gr-tn-lt brn,micxln,dens;min intrxln-no POR,pos sl stn,scat FLOUR,vsl-no CUT"

DEPTH	LITHOLOGY

5970.00 5980.00 "LS ltgy-ltygbrn-trnsl,micsuc-mixln-gran,crpxl-micxl,vf gr LS GRNST/chky mot plty prtgs & occ POR fl,tr loose f-vf QTZ gr,sl dol ip,grdg to vf-f gr lmy SS,tt-tr intxl POR,fr scat dull yel FLOR,no-rr lt brn STN,slow dif CUT"

5980.00 5990.00 "LS AA,POR-FLOR-STN-CUT AA"

5990.00 6000.00 "DOL ltbrn-tan-ltbrngy,micsuc-micxl-vf gr,gran,DOL GRNST/tr lmy chky plty prtgs & rr POR fl,occ grdg to vf gr dol LS AA,tr intxl POR,fr scat mod bri yel FLOR,tr ltbrn STN,fr mod fast strmg CUT"

6000.00 6010.00 "LS AA,vf gr LS GRNST/chky mot plty prtgs & occ POR fl,slty-rr QTZ AA,incr dol,grdg to vf-f gr lmy SS-SLTST,tt-tr intxl POR,rr scat dull yel FLOR,no-rr lt brn STN,tr v fnt res ring CUT"

6010.00 6020.00 "DOL AA,POR-FLOR-STN AA,no-sl tr v fnt res ring CUT"

6020.00 6030.00 "LS ltgy-ltygbrn-trnsl,micsuc-mixln-gran,crpxl-micxl,vf gr LS GRNST/chky mot plty prtgs & occ POR fl,slty/tr loose vf QTZ gr,v sl dol ip,grdg to vf-f gr lmy SS,tt-tr intxl POR,fr scat dull yel FLOR,no-rr lt brn STN,v fnt res ring CUT"

6035.00 6040.00 "LMY DOL,lt gr,micxln,chky,dens,argil AA;minor-no shows AA"

6040.00 6050.00 "LMY DOL,gr-lt gr,micxln,dens,chky,argil,rr tn transl CHT;no vis POR,vsl-no STN,dull FLOUR,vsl-no CUT"

6050.00 6060.00 "LMY DOL,gr-lt gr,micxln,dens,chky,argil,rr tn transl CHT,scat DOL PCKSTN,brn,vfn xln,sl suc;DOL w pr-fr POR,fr STN,bri FLOUR,sl strm CUT"

6060.00 6070.00 "LMY DOL,gr-lr gr,argil AA,DOL PCKSTN,tn-brn,vfn xln,sl suc-dens,vl sl foss;DOL PCKSTN w lt brn STN,pr intrxln POR,dull FLOUR,fr strm CUT"

6070.00 6080.00 "pred LMY DOL,gr-lr gr,argil AA,minor DOL PCKSTN,tn-brn,vfn xln,sl suc-dens,vl sl foss;DOL PCKSTN w sl show AA"

6080.00 6090.00 "LMY DOL,gr-lr gr,argil AA,DOL PCKSTN,tn-brn,vfn xln,sl suc-dens,scat tn transl CHT;DOL PCKSTN w lt brn STN,pr intrxln POR,dull FLOUR,fr strm CUT"

6091.00 6100.00 "DOL LS,crm-wht,sft,micxln,dens,DOL PCKSTN,tn,vfn-micxln,dens-sl suc,scat tn CHT AA,scat shl,dk gr,carb,blky;brn STN on DOL,pr vis POR,spty FLOUR,sl strm CUT"

6103.00 6110.00 "DOL LS,crm-wht AA,DOL PCKSTN,tn,vfn-micxln AA,scat tn transl CHT;brn-dk brn STN on DOL,pr vis POR,spty FLOUR,sl strm CUT"

6113.00 6120.00 "DOL LS,crm-wht AA,DOL PCKSTN grd to GRNSTN ip,tn,vfn-micxln AA,scat tn transl CHT;brn-dk brn STN on DOL,pr vis POR,spty FLOUR,sl strm CUT"

6130.00 6140.00 "LMY DOL,gr,micxln,dens-chky ip,DOL PCKSTN grd to GRNSTN ip,tn-brn,vfnxln,suc,sl foss,scat tn CHT;DOL w gd brn STN,dull-bri yel FLOUR,fr intrxln POR,sl-fr strm-gd diff CUT"

6140.00 6150.00 "DOL ltbrn-tan,occ brn,micsuc-gran-micxl,DOL GRNST/tr chky lmy cmt & occ plty prtgs,occ grdg to dol LS,tr dk brn CHT frag & incl,tt-tr intxl POR,fr even dull yel-orng FLOR,tr ltbrn STN,fr dif/v fnt res ring CUT"

DEPTH	LITHOLOGY

6150.00 6160.00 "DOL bcmg incr brn,occ ltbrn-tan,AA/incr scat brn-bkbrn CHT frag & incl,POR-FLOR-STN-CUT AA"

6160.00 6170.00 "DOL brn,tan-ltbrn,micsuc-gran-micxl,DOL GRNST/occ chky lmy cmt,tr ltgy-ltgybrn plty LS prtgs,tr dk brn CHT frag & incl,tr-fr intxl POR,fr even dull yel-orng FLOR,tr ltbrn STN,fr slow strmg CUT"

6170.00 6180.00 "LS ltgy-ltgybrn,crm-wh,crpxl-micxl,chky,cln,plty,sft-occ dns,occ sl mot,tt-tr intxl POR,tr v dull orng-yel FLOR,no vis STN,v fnt res ring CUT"

6180.00 6190.00 "DOL AA/tr CHT AA,scat LS AA,POR-FLOR-STN AA,fr-g slow strm CUT "

6190.00 6200.00 "DOL ltbrn-tan,occ brn,micsuc-gran-micxl,DOL GRNST/tr chky lmy cmt & occ plty prtgs,tr dk brn CHT,tr-fr intxl POR,fr even dull yel-yel orng FLOR,tr ltbrn STN,fr dif/tr slow strmg CUT"

6200.00 6210.00 "DOL AA,DOL GRNST,tr CHT AA,w/scat LS AA,POR AA/tr chky lmy fl,FLOR-STN AA,fr dif/tr slow-mod fast strmg CUT"

6210.00 6220.00 "DOL ltbrn-tan,occ ltgy-ltgybrn,micsuc-micxl-gran,DOL GRNST/tr chky lmy cmt & occ POR fl,sl chky,w/plty LS AA,tr scat mod bri yel FLOR,fr-tr ltbrn STN,g-fr dif CUT"

6220.00 6230.00 "DOL AA,DOL GRNST,cln,dns,w/decr LS AA,tt-tr intxl POR,g-fr even dull-mod bri yel FLOR,g ltbrn STN,g fast strmg CUT"

6230.00 6240.00 "DOL AA,DOL GRNST/incr plty LS prtgs,tr DOL PCKST,tr dkbrn CHT incl,tt-tr intxl POR,fr-tr scat-spty dull yel FLOR,fr ltbrn STN,g dif/tr mod fast strmg CUT"

6250.00 6260.00 "DOLO GRNSTN grd to PCKSTON,tn-lt brn-brn,vfn-micxln,suc-densip,LS,crm-tn,micxln,chky,dens,DOLO w pr-fr STN,FLOUR,CUT"

6260.00 6270.00 "LMY DOLO,crm-lt gr,micxln,dens,chky tex,DOLO GRNSTN grd to PCKSTN,vfnxln,suc-dens ip;scat lt brn STN,scat dull FLOUR,sl-vsl stn CUT"

6272.00 6280.00 "pred LMY DOLO,crm-lt gr,micxln,dens-chky,argil;no vis POR or STN,v spty dull FLOUR,vsl-no CUT"

6280.00 6290.00 "DOL ltgybrn-ltgy-ltbrn,occ crm,tan,micsuc-gran-micxl,occ vfxl,crpxl,DOL GRNST/tr chky lmy cmt & POR fl,tr PCKST/sact plty chky LS,tt-tr intxl POR,rr scat dull yel FLOR,tr ltbrn STN,p res ring CUT"

6290.00 6300.00 "LS crm-wh-tan,occ ltgy-gybrn,crpxl,occ micxl,chky,plty,rr trnsl xl ANHY,occ intbd in DOL AA,NFSOC"

6300.00 6310.00 "DOL m-ltbrngy,tan,occ lt-mbrn,micxl-micsuc-gran,occ crpxl-vfxl,DOL GRNST,tr scat LS PCKST/scat plty LS AA,tr trnsl-brn CHT frag,tt-tr inxl POR,tr-fr scat dull-mod bri yel FLOR,tr-fr lt-mbrn STN,fr res ring CUT"

6310.00 6320.00 "DOL AA/incr LS PCKST,POR-FLOR-STN-CUT AA"

6320.00 6340.00 "DOL ltbrn-brn-gybrn,micxl-vfxl,crpxl ip,occ gran-suc,v sl alg,lmy,occ DOL PKST-pred lmy DOL GRNST,tr intxl-v rr alg POR,tr dull yel FLOR,tr ltbrn STN,tr-fr slow-mod fast CUT,w/wh-crm-tan,crpxl-micsuc dol LS incl,tt-v rr intxl POR,p FLOR-STN-CUT,scat CHT"

DEPTH	LITHOLOGY

6340.00 6350.00 "LS crm-tan-brn,crpxl-vfxl,micsuc-gran ip,incr dol-sl alg LS GRNST,w/scat LS PKST,occ lmy DOL GRNST AA,tr intxl-v rr alg POR,tr spty dull-bri yel FLOR,tr spty ltbrn STN,tr slow-mod fast CUT"

6350.00 6360.00 "LS AA,FLOR-STN-CUT AA,w/tan-brn-gybrn,occ mbrn DOL GRNST,micxl-vfxl,gran-v sl alg,tr intxl-v rr alg POR,tr spty dull-bri yel FLOR,tr spty ltbrn STN,tr slow-mod fast CUT,scat trnsl-brn-mot tan-gy CHT frag"

6360.00 6370.00 "LS AA,incr wh-crm plty micxl,w/incr DOL GRNST,incr intxl-alg POR,incr FLOR-STN-CUTAA,scat CHT AA"

6370.00 6390.00 "DOL ltbrn-brn-gybrn,micxl-vfxl,crpxl ip,occ gran-micsuc,sl alg,lmy,pred lmy DOL GRNST,tr intxl-v rr alg POR,tr dull yel FLOR,tr ltbrn STN,tr-fr slow-mod fast CUT,w/wh-crm-tan,crpxl-micsuc-plty LS incl,tt-v rr intxl POR,p FLOR-STN-CUT,decr CHT AA"

6390.00 6400.00 "DOL AA,pred lt-mbrn micsuc sl alg DOL GRNST,fr-g intxl-rr alg POR,fr dull-bri yel FLOR,tr ltbrn-v rr spty blk STN,fr slow-mod fast CUT,w/crm-tan sl dol LS PKST,tt"

6400.00 6420.00 "DOL ltbrn-brn,micxl-vfxl,gran-micsuc,v sl alg,pred sl lmy DOL GRNST,scat trnsl-bf CHT frag,fr-g intxl-tr alg POR,fr bri-dull yel FLOR,tr ltbrn-v rr spty blk STN,fr-g mod fast stmg CUT,bcmg & w/thn intbd wh-crm,crpxl-micxl,plty,dns,sl dol LS"

6420.00 6430.00 "DOL AA,incr LS AA,scat trnsl-bf-clr,occ dkgy CHT frag"

6430.00 6440.00 "DOL AA,POR-FLOR-STN-CUT AA,scat CHT AA-slincr dkgy frag,w/wh-crm,occ tan-brn-ltgybrn crpxl-micxl,pred plty LS PKST,dns,tt,NFSOC"

6440.00 6450.00 "DOL ltbrn-brn,micxl-vfxl,gran-micsuc,v sl alg,pred sl lmy DOL GRNST,scat trnsl-bf CHT frag,fr-tr intxl-rr alg POR,fr bri-dull yel FLOR,fr ltbrn-v rr spty blk STN,fr-g mod fast stmg CUT,w/thn intbd wh-crm,crpxl-micxl,plty,dns,sl dol LS"

6450.00 6460.00 "DOL AA,tr scat LS AA,POR-FLOR-STN-CUT AA"

6460.00 6470.00 "DOL GRNST ltbrn,micxl-vfxl-micsuc,gran,occ crpxl,tr lmy cmt,POR-FLOR-STN-CUT AA/ LS PCKST mbrn-brn,tan,crpxl,occ micxl,dns-occ plty,chky,rr bf-trnsl CHT,tt,NFSOC"

6470.00 6480.00 "SH blk,sbblky-sbplty-irreg,frm-hd,carb,occ v sl calc,intbd/trnsl-dkbrnblk-blk CHT,w/LS PCKST AA & scat DOL GRNST AA"

6480.00 6490.00 "LS tan,ltgybrn,ltgy-off wh,crpxl,occ micxl,dns/scat chky plty frag,intbd/bf-tan CHT,tt,NFSOC,sl incr SH & CHT AA,DOL AA"

6490.00 6500.00 "LS brn-ltbrn,m-ltbrngy,tan,occ off wh,crpxl,occ micxl,LS PCKST,dns,tr intbd dkbrn-brnblk-blk CHT,occ chky-v chky,tr scat chky plty prtgs,NFSOC"

6500.00 6510.00 "LS AA,pred LS PCKST,intbd/plty chky prtgs & CHT AA,tt,NFSOC,w/scat DOL AA,POR-FLOR-STN-CUT AA,SH frag AA"

6510.00 6520.00 "DOL ltbrn,tan,crpxl,occ micxl-vfxl-gran,DOL PCKST,rr GRNST,cln,dns,occ sl-v calc,v sl chky ip,occ intbd/CHT AA,tt-vrr intxl POR,sl tr v dull orng yel FLOR,tr ltbrn STN,no CUT"

DEPTH	LITHOLOGY

6520.00 6530.00 "DOL brn-ltbrn,crpxl-vfxl-micxl,micsuc-gran,pred DOL GRNST/tr chky lmy cmt & POR fl,tr scat bf CHT frag & incl,cln,dns,tt-tr intxl POR,tr scat dull yel FLOR,fr ltbrn-tr brn STN,tr dif CUT"

6530.00 6540.00 "DOL AA,pred DOL PCKST,occ ltbrn-brn DOL GRNST,tt-vrr intxl POR,sl tr v dull yel FLOR,rr ltbrn STN,v p slow dif-ring CUT,intbd crm-tan-offwh,crpxl-micxl,occ plty,rthy,sl dol,tt LS,NFSOC"

6540.00 6550.00 "DOL & LS AA,sl incr DOL POR-FLOR-STN-CUT,trnsl-brn-gybrn CHT frag"

6550.00 6560.00 "DOL ltbrn-brn,crpxl-vfxl,gran-micsuc ip,incr DOL GRNST-scat PKST,lmy,chty,tt-tr intxl POR,tr dull yel FLOR,rr ltbrn-blk STN,tr slow stmg-slow dif CUT,intbd wh-crm,rr tan crpxl-micxl,plty,dol LS PKST,scat CHT frag"

6560.00 6570.00 "DOL AA,occ ltgy-gybrn crpxl-plty,rthy DOL PKST,thn intbd plty LS AA,decr DOL POR-FLOR-STN-CUT,trnsl-brn-gybrn CHT frag"

6570.00 6580.00 "DOL ltgy-offwh,occ tan-ltbrn,crpxl-vfxl,gran-micsuc ip,pred DOL GRNST,occ PKST,sl anhy,v rr tt crpxl plty LS,scat CHT frag,tr intxl POR,n-v rr dull yel FLOR,n-v rr spty ltbrn STN,n-v p slow dif CUT"

6580.00 6600.00 "DOL ltgy-tan,occ offwh,crpxl-micxl,occ gran,pred tt DOL GRNST,sl arg,occ lmy,sl chty,occ anhy,n-tr intxl POR,n-rr spty dull yel FLOR,n-rr spty ltbrn STN,n-v p dif-slow stmg CUT,w/scat brn-trnsl CHT frag & occ wh-crm,crpxl,plty,rthy tt LS"

6600.00 6620.00 "DOL ltgy-pred lt-mbrn,crpxl-vfxl,gran ip,intbd DOL GRNST-PKST,lmy ip,v sl anhy,rr mic fos,rr wh-crm crpxl plty LS PKST incl,rr scat mot brn-trnsl CHT frag,tt-rr intxl POR,tr spty dull-bri yel FLOR,tr ltbrn-v rr blk STN,rr fr slow stmg CUT"

6620.00 6630.00 "DOL ltgy-ltgybrn-lt-mbrn,crpxl-vfxl,rthy-gran,incr DOL GRNST,tr DOL PKST,sl lmy,occ sl anhy,rr micfos,rr intbd LS PKST,scat CHT frag,tt-fr intxl POR,tr-fr dull-bri yel FLOR,tr-fr ltbrn STN,tr fr slow stmg-dif CUT"

6630.00 6640.00 "DOL bcmg ltgybrn,occ ltgy-trnsl,AA,fr-tr intxl POR,g even mod bri yel FLOR,no-sl tr ltbrn STN,fr mod fast strmg CUT"

6640.00 6650.00 "DOL GRNST AA/occ PCKST frag,dns,cln/vrr blk SH incl,tr scat trnsl cht,occ v sl lmy/rr incl,g-fr intxln POR,g even mod bri yel FLOR,tr ltbrn STN,g dif/res ring CUT"

6650.00 6660.00 "DOL GRNST ltgybrn,lt tan,occ ltgy,vfxl-micxl,micsuc-gran,crpxl,tr scat & occ intbd PCKST,tr CHT AA,rr-vrr crpxl LS frag & incl,POR-FLOR-STN-CUT AA"

6660.00 6670.00 "DOL incr lt tan-tan,GRNST AA/occ PCKST frag,dns,cln,tr CHT AA,occ v sl lmy,g-fr intxln POR,g even mod bri yel FLOR,tr ltbrn STN,g dif-tr slow strmg CUT"

6670.00 6680.00 "DOL lt tan-tan,occ ltgy-ltgybrn,vfxl-micxl-gran,crpxl,DOL GRNST/tr scat DOL PKST,v sl lmy,rr scat wh chky plty LS prtgs & PCKST frag,rr CHT AA,fr-tr intxl POR,g even mod bri yel FLOR,tr-fr ltbrn STN,g dif-tr slow stmg CUT"

6680.00 6690.00 "LS wh,occ off wh-trnsl,crpxl,cln-chky,plty,NFSOC,w/DOL GRNST & PCKST AA,POR-FLOR-STN-CUT AA,incr bf-brn-blk CHT"

6690.00 6700.00 "DOL tan,ltbrn-lt tan,vfxl-micxl-micsuc,gran-crpxl,GRNST/tr scat PCKST,scat LS AA,occ grdg to dol LS,decr CHT,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6700.00 6710.00 "DOL AA,pred GRNST/scat PCKST,tr thn intbd plty LS AA,occ lmy-grdg to dol LS ip,POR-FLOR-STN AA,fr slow strmg CUT,tr trnsl-rr brn CHT frag"

6710.00 6720.00 "DOL tan,lt tan,occ ltgy-trnsl,vfxl-micxl-micsuc,gran-crpxl,DOL GRNST/incr wh-off wh chky plty LS prtgs,occ grdg to dol LS,tr PCKST,pred cln,dns,fr-tr intxl POR,g even mod bri yel FLOR,fr ltbrn STN,fr dif/sl tr slow strmg CUT,CHT AA"

6720.00 6740.00 "DOL AA,pred GRNST/scat PCKST-incr w/depth,vrr trnsl xln ANHY,tr CHT AA,chky plty LS AA,POR-FLOR AA,tr-g ltbrn/rrblk STN-STNincr w/depth,fr-g slow strmg CUT"

6740.00 6750.00 "DOL ltgy-offwh,rr ltbrn,crpxl-vfxl,occ gran-micsuc,occ plty,v sl rthy,occ lmy,v rr mic fos,sl tr trnsl-bf CHT frag & v rr plty LS incl,tt-tr intxl POR,tr-fr spty dull yel FLOR,v rr spty ltbrn-v rr blk STN,rr slow dif-slow stmg CUT"

6750.00 6760.00 "DOL AA,pred ltgy-offwh,occ plty DOL PKST,w/v thn DOL GRNST,LS & CHT AA,rr-tr intxl POR,tr dull yel FLOR,n-v rr spty ltbrn STN,tr-fr slow dif-tr slow stmg CUT"

6760.00 6780.00 "DOL ltgy-offwh,tan-bf,rr ltbrn,crpxl-micxl,rr vfxl-gran,pred plty-dns DOL PKST,v rr DOL GRNST,scat plty LS incl-trnsl CHT frag,tt-tr intxl POR,n-tr dull yel FLOR,n-v rr spty STN,rr-tr slow dif-rr slow stmg CUT"

6780.00 6790.00 "DOL AA,pred ltgy-ltgybrn DOL PKST,v rr mic fos,sl incr DOL GRNST,tt-tr intxl POR,tr dull yel FLOR,rr-tr ltbrn STN,n-p slow dif-slow stmg CUT,w/trnsl-mot brn CHT & wh-crm crpxl plty LS PKST frag"

6790.00 6800.00 "SH blk/occ dkbrnblk strk,sbblky-sbplty-irreg,frm-hd,carb,occ sl sil-chty,prob cvgs,occ v sl slty ip,DOL AA,POR AA,tr scat mod bri-dull yel FLOR,fr ltbrn STN,tr-fr dif/res ring CUT"

6800.00 6810.00 "DOL ltgybrn,ltgy,occ,brn-mot/blk SH,vfxl,micxl-micsuc-gran,occ crpxl,GRNST/scat ltgy-wh chky-plty LS & SH AA,vrr trnsl xln ANHY,tr-fr intxl POR,fr scat dull/rr mod bri yel FLOR,v fnt res ring CUT"

6810.00 6820.00 "DOL incr brn-dkbngy/blk SH mot,AA,occ grdg to mot dol LS,POR-FLOR-STN-CUT AA"

6820.00 6830.00 "DOL m-ltgybrn,dk-mbrn,occ ltgy,blk,vfxl-micxl,micsuc-gran,occ crpxl,rthy,GRNST/tr chky cmt-POR fl,tr scat chky LS,rr blk SH strk,occ sl lmy,NFSOC"

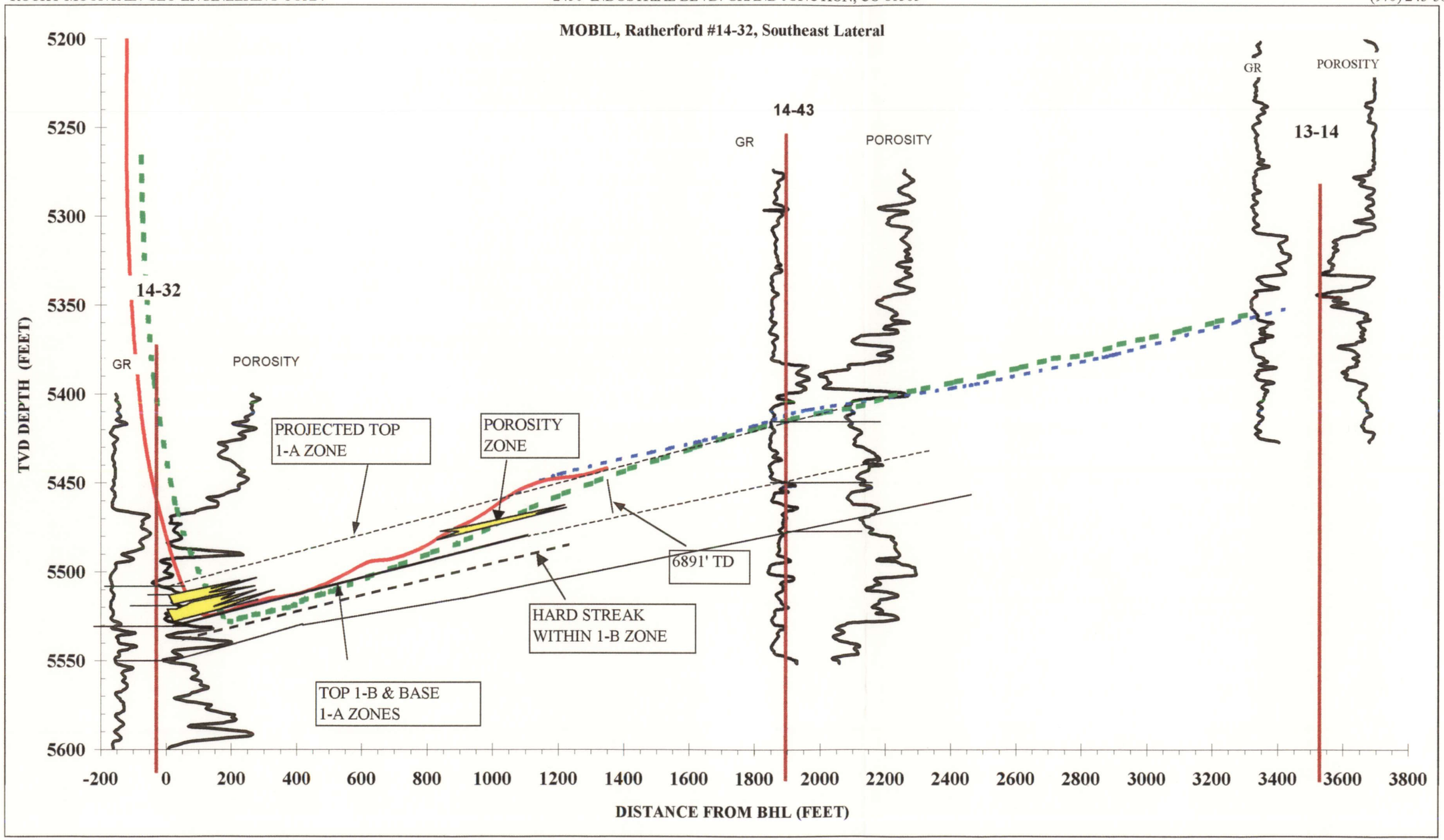
6830.00 6840.00 "DOL m-ltgybrn,dkbrngy,occ blk mot,AA,pred GRNST/scat plty chky LS AA,occ intbd/blk SH AA,rr trnsl xln ANHY,tr scat brn CHT,tr scat dull yel FLOR,fr ltbrn/tr brn STN,v p res ring CUT"

6840.00 6850.00 "SH blk,sbblky-sbplty-irreg,frm-hd,carb,occ sl sil,occ intbd /DOL AA,occ v sl slty ip,DOL AA,POR AA,tr scat dull/rr mod bri yel FLOR,fr ltbrn/tr brn STN,v p res ring CUT"

6850.00 6860.00 "DOL ltgybrn,ltgy,occ brn-mot/rr blk SH incl,vfxl,micxl-micsuc-gran,occ crpxl,GRNST/scat ltgy-wh chky-plty LS,vrr trnsl xln ANHY,POR-FLOR-STN-CUT AA"

6860.00 6880.00 "DOL ltgy-wh,ltbrn-ltgybrn ip,crpxl-micxl,v rr micsuc,rthy,lmy ip,v sl anhy,w/v rr thn blk carb SH lams,scat trnsl-mot brn CHT frag,v rr thn wh-crm plty LS incl,tt-v rr intxl POR,n-v rr spty dull yel FLOR,n-v rr spty ltbrn STN,n-v p slow dif CUT"

6880.00 6891.00 "DOL AA,pred ltgy-tan,crpxl-micxl DOL PKST,w/v thn SH AA,scat CHT frag,v rr LS PKST incl,tt-v rr intxl POR,n-v rr spty dull yel FLOR,n vis STN,n-v rr slow dif CUT"


MOBIL, Ratherford #14-32, Southeast Lateral
14-32
14-43
13-14
GR
POROSITY
PROJECTED TOP
1-A ZONE
POROSITY
ZONE
6891' TD
HARD STREAK
WITHIN 1-B ZONE
TOP 1-B & BASE
1-A ZONES
TVD DEPTH (FEET)
DISTANCE FROM BHL (FEET)
5200
5250
5300
5350
5400
5450
5500
5550
5600
-200
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400
600
800
1000
1200
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1600
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2000
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3000
3200
3400
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3800

Form 3160-4
(July 1992)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-247A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other SIDETRACK

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

2. NAME OF OPERATOR: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.

8. FARM OR LEASE NAME, WELL NO.: RATHERFORD 14-32

3. ADDRESS AND TELEPHONE NO.: P.O. Box 633, Midland, TX 79702 (915) 688-2585

9. API WELL NO.: 43-037-15858

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2130' FNL & 1830' FEL
At top prod. interval reported below
At total depth: * #37

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC 14, T41S, R23E

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
NA	05-09-97	SAN JUAN	UTAH

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
05-13-97	06-03-97	06-26-97	4595 GR	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
** #37	** #37		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)*: IS-DC

25. WAS DIRECTIONAL SURVEY MADE: YES

26. TYPE ELECTRIC AND OTHER LOGS RUN: MUD LOGS (2) LAT 1, LAT 1 SIDETRACK, LAT 2 6-12-97

27. WAS WELL CORED: NO

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 3/4"	33#	87'	17 1/2"	CIRCULATED 100 SXS	
8 3/8"	32#	1332'	11"	400 SXS	
5 1/2"	15.5#	5594'	7 7/8"	4147 TS 200 SXS	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	5354'	5135' TAC

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31. PERFORATION RECORD (*Interval, size and number*)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5522-6690'"2A1"	ACIDIZE W/11690 GALS 15% HCL
5813-5500'"1A1"	ACIDIZE W/4400 GALS 15% HCL

*** #37

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping - size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
07-06-97	24			57	53	548	930

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL - BBL.	GAS - MCF.	WATER - BBL.	OIL GRAVITY - API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS: DIRECTIONAL SURVEY REPORT

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Shirley Hawkins TITLE ENV. & REG. TECHNICIAN DATE 07-29-97

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdicton.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

38. GEOLOGIC MARKERS

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
*#4			LAT #1A1-288' NORTH & 376' WEST OF SURF LOC.			
			LAT #1B1-595' NORTH & 564' WEST OF SURF LOC			
			LAT #2A1-933' SOUTH & 970' EAST OF SURF LOC			
**#20			LAT #1A1(5515-5499'TVD)(5595-5795'TMD)			
			LAT #1B1(5516-5600'TVD)(5585-6158'TMD)			
			LAT #2A1(5524-6441'TVD)(5671-6891'TMD)			
***#32	6158'	6030'	LATERAL #1B1 ACIDIZED WITH 8800 GALS			
	5940'	5645'	15% HCL ACID.			

U.S. GOVERNMENT PRINTING OFFICE: 1992-774-672

Rutherford Unit # 14-32
Drilled Footage Calculations

Surface location: 2135' FNL, 1830' FEL 14-41S-23E

Lateral #1A1 (MWD log #1)
KOP MD = 5345'
TVD = 5342.36'

EOL MD = 5795'
TVD = 5498.52

Footage drilled = 450'

Lateral #1B1 (MWD log #1 ST1)
KOP MD = 5572'
TVD = 5514.20'
EOL MD = 6158'
TVD = 5599.77

Second lateral is kicked off in the first lateral

Footage drilled = 586

Lateral #2A1 (MWD log #2)
KOP MD 5261
TVD 5258.36
EOL MD 6891
TVD 5441.61

Footage drilled = 1630

Total footage drilled = 2666'
Deepest point (TVD) = 5600'

DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR MOBIL PRODUCING TX & NM, INC.

ADDRESS P. O. BOX 633
MIDLAND, TEXAS 79702

OPERATOR ACCT. NO. N

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION					SPUD DATE	EFFECTIVE DATE
					QQ	SC	TP	RG	COUNTY		
			43-037-15858	RATHERFORD #14-32		14	41S	23E	SAN JUAN	5-13-97	6-25-97
WELL 1 COMMENTS:											
WELL 2 COMMENTS:											
WELL 3 COMMENTS:											
WELL 4 COMMENTS:											
WELL 5 COMMENTS:											

ACTION CODES (See instructions on back of form)
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

Shirley Houchins
Signature SHIRLEY HOUCHINS
ENV. & REG. TECH 7-14-97
Title Date
Phone No. (915) 688-2585

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACT AMEND
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2130' FNL & 1830' FEL SEC.14, T41S, R23E

8. Well Name and No.: RATHERFORD 14-32
9. API Well No.: 43-037-15858
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACT	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

BOTTOM HOLE LOCATION
LATERAL #1A1: 288' NORTH & 376' WEST FROM SURFACE SPOT (ZONE 1a)
LATERAL #1B1: 595' NORTH & 564' WEST FROM SURFACE SPOT (ZONE 1b/1d)
LATERAL #2A1: 933' SOUTH & 970' EAST FROM SURFACE SPOT (ZONE 1a)

SEE ATTACHED.

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14. I hereby certify that the foregoing is true and correct
Signed Shirley Bowden Title ENV. & REG. TECHNICIAN Date 07-14-97

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT #14-32
14-20-603-247A
NAVAJO TRIBAL
SAN JUAN, UTAH

05-05-97	DIG PITS, PREP LOCATION. MIRU NAVAJO WEST RIG #15. BLEED DOWN GAS, POOH W/EQUIPMENT. SWI & SDFN.
05-06-97	RIH W/RBP, SET @ 5396', PRESS TEST RBP & CSG. TO 1000#, LOST 400# IN 1 MIN., POOH & LAY DOWN TBG. SDFN.
05-07-97	POOH LAY DOWN PROD. TBG., RU SCHLUMBERGER, RAN COMP. NEUTRON W/GR/CCL F/5377-4400' RD SAME. REMOVE CMT. BASE & CELLAR, CUT OFF CSG & REMOVE EXISTING WELLHEAD. NU NEW WELLHD.
05-08-97	POUR READY MIX CMT. IN CELLAR FOR STABILISATION OF WELLHD. RU FLOOR ON UNIT & TIH W/5.5" PKR, & 2 7/8" TBG. TO 3300' PRESS. TEST RBP & CSG TO 1000# OK. ATTEMPT TO TEST ANNULUS F/3300' TO SURFACE. NO TEST. WORK PKR UPHOLE & ISOLATE HOLES IN 5.5" CSG. BETWEEN 313-3209'. LOSE PRESS 500# IN 15 MIN. UNABLE TO EST. INJ. RATE.
05-09-97	DUMP 2 SXS OF SAND ON BRIDGE PLUG, POH W/PKR & 2 7/8" TBG. RIH W/2 7/8" TBG TO 4100' (OPEN END) DISPLACE HOLE W/FRESH WTR. POH TO 3258.74'. RIG UP END SQUEEZE CSG. LEAK F/3193-3209' W/50 SXS OF CMT. POH SIW.
05-10-97	TEST CSG TO 1250 PSI. OK. RIH W/4.75 BIT, 6.3.5" DRLG COLLARS RO 2 7/8" TBG TO 3011', TAG TOP OF CMT. DRLG OUT TO 3257'. RIG UP & TEST CSG TO 1000 PSI. LEAKED, POH STAND BACK COLLARS. RIH OPEN ENDED TO 3233' SWIFN.
05-11-97	SIP @ 7:30 WAS 0 PSI. MIRU DOWELL CMT. UNIT. DISPLACE CSG /71 BBLS FRESH WTR. F/3233' TO SURFACE. MIX & PUMP 25 SXS CLASS "G" CMT. BAL. PLUG TO END OF TBG @ 3233', POH TO 2873'. REVC. OUT TBG. PUMP 1.5 BBLS OF CMT INTO CSG. LEAK, PRESS TO 1500 PSI, POH SHUT BLIND RAMS PRESS CSG TO 750 PSI. SIFN.
05-12-97	SICP @ 7:30 WAS 650 PSI. RIH W/BIT, 6-3.5' DRLG COLLARS, RI 2 7/8" TBG TO 3090', TAG TOP OF CMT. DRLG OUT CMT F/3090-3233', RIG UP PRESSURE CHART, TEST CSG TO 550 PSI, OK. RIH W/EXCESS TBG. POH LAY DOWN PIPE. NIPPLE DOWN BOPE. RIG DOWN MOVE OFF RIG, PUMP & PIT, CLEAN LOCATION.
DRILLING	
05-13-97	MIRU BIG A RIG #25, NOTIFY JIM THOMPSON STATE OF UTAH, JOE RUYBALID BLM & JOE CAPITAN NLM 05-13-97 OF INTENT TO BEGIN RE-ENTRY OPERATIONS.
05-14-97	FINISH MIRU, NUBOP, TEST BOP 250 LOW, 2000 HIGH, TIH W/BIT & SCRAPPER, POOH, RIH W/RETRIEVE TOOL AND RETRIEVE RBP, POOH LD RBP.
05-15-97	MIRU BASIN WL & RIH W/BORE PKR, W/ORIENT KEYWAY FOR RETIEVABLE WHIPSTOCK ASSEMBLIES, SET PKR @ 5360', POOH RD BASIN. MIRU GYRO DATA & RUN GYRO FOR KEYWAY ORIENTATION, POOH RD GYRO DATA, POOH W/LATCH ASSM.
05-15-97	RIH W/RETRIEVABLE WHIPSTOCK ASSM & SET WITH WS ORIENTED TO 309 DEG. SHEAR OFF AND MADE START MILL CUT, POOH PU WINDOW MILL ASSM & TIH. PREP FOR LATERAL #1A1.
05-16-97	FINISH TIH W/MILL ASSM & CUT WINDOW FOR WHIPSTOCK F/5346-5352'. CIRC POH & LD WINDOW MILL ASSM.
05-17-97	CONTINUE DRILLING CURVE SECTION TO 5418'. PULL GYRO & RD SAME DRILL 5418-5556' CURVE. LATERAL #1A1.
05-18-97	CONTINUE DRILLING CURVE LATERAL #1A1 TO 5595'. COME BACK TO BOTTOM OF CURVE & SIDETRACT TO NEW DIRECTION.
05-19-97	PULL BIT TO 5595' & THROUGHED HOLE F/5595-5610' W/TOOLFACE @ 180 DEGREES TO ATTEMPT SIDETRACT GOT TO 5618', FELL INTO OLD LAT. PULL TO 5580' & THROUGH & KICK OFF AT 5585' NOW TIME DRILLING TO 5604' , LATERAL #1B1.

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT #14-32
14-20-603-247A
NAVAJO TRIBAL
SAN JUAN, UTAH
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05-20-97	LATERAL 1B1, TIME DRILL TO 5607', CONTINUE ON LATERAL SECTION SLIDE & ROTATE, DRILL TO REPORT TIME TD OF 5941'.
05-21-97	CONT. DRILLING LATERAL 1B1 TO TD 6158' TMD & 5599' TVD. POOH & DIRECTIONAL DRILLING ASSM.
05-22-97	TIH W/RETRIEVING WHIPSTOCK ASSM , CATCH & SHEAR RELEASE WHIPSTOCK, POOH & LD SAME, PREP CSG FOR LATERAL #2.
05-22-97	PU RETRIEVABLEWHIPSTOCK ASSM. ORIENT WHIPSTOCK FACE TO 135 DEG. & KEY ON LATCH TO 25 DEG. TOTAL 80.9 MILL STARTING WINDOW IN CAS 5261-5262', CIRC, POOH W/WATERMELON MILL & MILL ASSM TO FINISH CUTTING WINDOW.
05-23-97	TIH W/WATERMELON MILL & MILL ASSM FOR CUTTING WINDOW, CUT WINDOW IN 5 1/2" CSG 5262-5267', OPEN HOLE TO 5268', CIRC SWEEPS, POOH & LD ALL MILL ASSEMBLY. LATERAL #2A1
05-24-97	LATERAL #2A1 CURVE, SLIDE DRILL TO 5323', POOH W/WL & GYRO DATA. CONT. DRILLING CURVE TO 5409'.
05-25-97	FIN TIH W/CURVE DRILLING ASSM, CONTINUE DRILL CURVE LATERAL #2A1 F/5409-5671'.
05-26-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/5671-5822'.
05-27-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/5822-5970'.
05-28-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/5970-6131'.
05-29-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/6131-6302'.
05-30-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/6302-6448'.
05-31-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/6648-6600'.
06-01-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/6600-6790'.
06-02-97	LATERAL #2A1, ROTATE & SLIDE DRILL F/6790-6891', TD LATERAL #2A1 @ 6891' TMD & 5441 TVD, ANGLE 93, DIRECTION 123, VS 1346. POH & LD DP, DC'S, TBG & MUD MOTOR.
06-03-97	ND BOP & CAPPED TBG HEAD W/FLANGE & VALVE. RD, RELEASE RIG @2400 HR.

COMPLETION

06-06-97	SICP @ 8:00 WAS 0 PSI. MIRU NAVAJO WEST RIG #36. SET PKR @ 5123', RIG UP PUMP & PIT. RIG UP CHART TO ANN. SIDE TEST CSG & PKR TO 750 PSI FOR 15 MIN. OK SIFN.
06-07-97	SITP @ 7:30 WAS 0 PSI, MIRU DOWELL COILED TBG UNIT. MIRU PUMP TRUCKS SIFN.
06-08-97	SITP @ 5:20 WAS 0 PSI, RIH W/1.5 COILED TBG TO 6894'. POH TO 6690', SPOT ACID TO END OF COILED TBG, ACIDIZE LATERAL #2A1 F/6690-5522' - 11690 GALS 15% HCL ACID. POH TO 3000', JET TBG TO 5500', POH RIG DOWN MOVE OFF.
06-09-97	SICP @ 7:30 WAS 0 PSI. SITP @ 7:30 WAS 0 PSI, RELEASE PKR POH. PICK-UP, RIH W/RETV. TOOLS FOR WHIPSTOCK. RIH TO 5261', RELEASE WHIPSTOCK, POH ORIENT RETV. WHIPSTOCK TO 309 DEG. RIH TO 5345' SET WHIPSTOCK. POH & LAY DOWN WORK STRING. NIPPLE DOWN BOPE. CAP WELL
06-10-97	RD NAVAJO WEST RIG #36. MOVE OFF LOCATION, TEMPORARY SUSPEND OPERATIONS/WO LOGGING UNIT TO LOG WELL.
06-17-97	MIRU NAVAJO WEST RIG #36, RIH W/PH6, POOH & STAND BACK. RIH W/ 2 7/8" WS, POOH & STAND BACK. FLUID LEVEL @ 1280', READY TO LOG.

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06-18-97	RU BPB INDUCTION LOGGING TOOLS ON PH6 TBG. RIH W/TOOLS TO 5616', TAG UP. WORK PIPE, CK WET CONNECT, MOVE =/- 10 FT MORE, LOG ON WAY OUT OF HOLE, SUSPECT TAGGING UP ON SIDETRACT/TROUGH @ +/- 5818'. SDFN.
06-19-97	RIH W/12 JTS PH6 TO 5500', SET PKR @ 5124'. TEST PKR TO 500 PSI, HELD. SDFN & FRIDAY.
06-20-97	MIRU DOWELL CT UNIT. TEST LINES TO 2500 PSI. RIT W/CT. TAG UP # 5813' IN LATERAL 1A1. PUMP 100 BBL 15% HCL ACID F/5813-5500', TRY TO GET IN LATERAL ATTACHMENT - #1B1, NO LUCK, POOH W/CT, BEND END OF TBG. SDFN.
06-21-97	POOH W/TBG, PKR, & PH6. PU PH6, PKR & TBG & RIH TO 6160' IN LATERAL 1B1. POOH TO 5644', SET & TEST PKR TO 500 PSI. SDFN.
06-22-97	MIRU DOWELL CT UNIT & PUMPS, SITP 0 PSI, RIH W/1.5" CT TO 6165' PUH TO 6158', ACIDIZE F/6158-6030 & 5940-5645' W/200 BBL 15% HCL. LATERAL #1B1. RDMO CT UNIT, POOH W/TBG & PKR, RIH W/RETRIEVING TOOL, SHEAR WHIPSTOCK, SDFN.
06-24-97	FINISH POOH W/TBG & REENTRY GUIDE, LD SAME, RIH W/SN, TAC & PRODUCTION TBG. EOT @ 5354', SN @ 5323', TAC @ 5135', ND BOPS, NU WELLHJEAD, SET TAC W/18K TENSION. SDFN.
06-25-97	PU RIH W/PUMP, STABILIZERS, RODS & POLISHED ROD, INSTALL NEW WELLHEAD VALVES, LOAD TBG W/FW, STROKE PUMP TO 500 PSI, HELD GOOD. RDMO NAVAJO WEST RIG #36. SDFN
06-26-97	FINISH CLEAN UP LOCATION, BACKFILL PITS, PUMPJACK TO BE INSTALLED.

sperry-sun
DRILLING SERVICES
A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
RU 14-32 - MWD Leg #1

SURVEY REPORT

9 June, 1997

Survey Ref: svy1763

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.170	336.190	100.00	0.14 N	0.06 W	0.15	0.170
300.00	0.150	347.130	300.00	0.66 N	0.24 W	0.69	0.018
500.00	0.390	301.460	500.00	1.27 N	0.88 W	1.54	0.152
700.00	1.160	276.860	699.98	1.87 N	3.47 W	3.44	0.411
900.00	1.810	282.340	899.91	2.79 N	8.56 W	6.94	0.332
1100.00	2.200	276.650	1099.79	3.91 N	15.46 W	11.58	0.219
1300.00	3.140	274.310	1299.57	4.76 N	24.74 W	17.27	0.473
1500.00	3.190	275.750	1499.26	5.73 N	35.74 W	23.98	0.047
1700.00	2.930	277.380	1698.98	6.95 N	46.34 W	30.68	0.137
1900.00	2.560	275.650	1898.75	8.04 N	55.86 W	36.70	0.190
2100.00	1.780	283.990	2098.60	9.23 N	63.31 W	41.70	0.420
2300.00	1.730	280.850	2298.51	10.55 N	69.29 W	46.02	0.054
2500.00	1.730	280.120	2498.42	11.65 N	75.23 W	50.12	0.011
2700.00	1.690	276.340	2698.33	12.51 N	81.13 W	54.01	0.060
2900.00	0.980	258.350	2898.27	12.49 N	85.74 W	56.46	0.408
3100.00	1.440	264.020	3098.23	11.88 N	89.91 W	58.18	0.237
3300.00	1.290	265.420	3298.17	11.44 N	94.66 W	60.35	0.077
3500.00	0.970	272.240	3498.13	11.32 N	98.59 W	62.36	0.173
3700.00	0.550	283.880	3698.12	11.62 N	101.22 W	64.01	0.223
3900.00	0.720	294.810	3898.10	12.38 N	103.29 W	65.76	0.104
4100.00	1.340	313.940	4098.07	14.53 N	106.11 W	69.09	0.350
4300.00	2.170	316.860	4297.97	18.91 N	110.39 W	75.08	0.417
4500.00	2.590	321.430	4497.80	25.21 N	115.79 W	83.30	0.230
4700.00	2.660	351.770	4697.60	33.34 N	119.28 W	92.02	0.688
4900.00	1.920	352.390	4897.44	41.25 N	120.38 W	99.30	0.370
MWD Leg #1							
5300.00	0.490	334.540	5297.36	47.46 N	124.01 W	106.49	0.365
5345.00	0.310	16.100	5342.36	47.75 N	124.06 W	106.76	0.733
5352.00	3.800	324.400	5349.36	47.96 N	124.19 W	107.01	51.658
5362.00	6.800	323.400	5359.31	48.70 N	124.74 W	107.93	30.013
5372.00	10.100	322.400	5369.20	49.87 N	125.63 W	109.39	33.031
5382.00	13.100	321.400	5379.00	51.45 N	126.87 W	111.39	30.066
5392.00	16.200	320.400	5388.67	53.42 N	128.47 W	113.90	31.102
5402.00	19.000	319.700	5398.20	55.73 N	130.41 W	116.90	28.079
5412.00	22.000	320.300	5407.57	58.42 N	132.66 W	120.37	30.073
5422.00	25.300	321.000	5416.73	61.52 N	135.20 W	124.35	33.119

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5432.00	28.900	321.200	5425.63	65.06 N	138.06 W	128.88	36.011
5442.00	32.100	319.600	5434.24	68.97 N	141.30 W	133.91	33.012
5452.00	35.200	317.800	5442.56	73.13 N	144.96 W	139.38	32.562
5462.00	38.400	315.900	5450.57	77.50 N	149.06 W	145.27	33.960
5472.00	41.300	314.300	5458.25	82.03 N	153.58 W	151.52	30.757
5482.00	43.100	312.500	5465.66	86.65 N	158.46 W	158.03	21.682
5492.00	44.600	312.300	5472.87	91.32 N	163.58 W	164.71	15.064
5502.00	46.600	313.000	5479.86	96.16 N	168.83 W	171.62	20.616
5512.00	49.200	313.800	5486.57	101.26 N	174.22 W	178.81	26.669
5522.00	52.900	313.900	5492.85	106.64 N	179.83 W	186.36	37.008
5532.00	56.800	314.000	5498.61	112.32 N	185.71 W	194.30	39.009
5542.00	60.700	314.100	5503.80	118.26 N	191.86 W	202.61	39.009
5552.00	66.500	314.200	5508.24	124.50 N	198.28 W	211.32	58.007
5562.00	72.500	314.200	5511.74	131.02 N	204.99 W	220.42	60.000
5572.00	79.000	314.300	5514.20	137.78 N	211.93 W	229.85	65.007
5582.00	87.500	313.400	5515.38	144.66 N	219.09 W	239.49	85.468
5595.00	93.200	313.400	5515.30	153.59 N	228.53 W	252.08	43.846
5604.01	93.300	313.500	5514.78	159.77 N	235.06 W	260.80	1.568
5635.75	91.700	311.700	5513.40	181.23 N	258.40 W	291.43	7.583
5667.48	93.800	314.100	5511.88	202.80 N	281.61 W	322.08	10.044
5699.26	95.500	313.600	5509.30	224.75 N	304.45 W	352.84	5.574
5731.04	97.200	311.000	5505.79	246.00 N	327.81 W	383.30	9.733
5762.80	97.000	311.100	5501.86	266.70 N	351.58 W	413.50	0.703
5794.80	95.000	311.100	5498.52	287.62 N	375.56 W	444.01	6.250

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 327.624° (True).
Coordinate System is UT-S. Grid Convergence at Surface is -4.170°.

Based Upon Minimum Curvature type calculations, at a Measured Depth of 5794.80ft.,
The Bottom Hole Displacement is 473.04ft., in the Direction of 307.446° (True).

sperry-sun
DRILLING SERVICES
A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
RU 14-32 - MWD Leg#1 ST1

SURVEY REPORT

9 June, 1997

Survey Ref: svy1765

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

	Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro								
	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
	100.00	0.170	336.190	100.00	0.14 N	0.06 W	0.15	0.170
	300.00	0.150	347.130	300.00	0.66 N	0.24 W	0.69	0.018
	500.00	0.390	301.460	500.00	1.27 N	0.88 W	1.54	0.152
	700.00	1.160	276.860	699.98	1.87 N	3.47 W	3.44	0.411
	900.00	1.810	282.340	899.91	2.79 N	8.56 W	6.94	0.332
	1100.00	2.200	276.650	1099.79	3.91 N	15.46 W	11.58	0.219
	1300.00	3.140	274.310	1299.57	4.76 N	24.74 W	17.27	0.473
	1500.00	3.190	275.750	1499.26	5.73 N	35.74 W	23.98	0.047
	1700.00	2.930	277.380	1698.98	6.95 N	46.34 W	30.68	0.137
	1900.00	2.560	275.650	1898.75	8.04 N	55.86 W	36.70	0.190
	2100.00	1.780	283.990	2098.60	9.23 N	63.31 W	41.70	0.420
	2300.00	1.730	280.850	2298.51	10.55 N	69.29 W	46.02	0.054
	2500.00	1.730	280.120	2498.42	11.65 N	75.23 W	50.12	0.011
	2700.00	1.690	276.340	2698.33	12.51 N	81.13 W	54.01	0.060
	2900.00	0.980	258.350	2898.27	12.49 N	85.74 W	56.46	0.408
	3100.00	1.440	264.020	3098.23	11.88 N	89.91 W	58.18	0.237
	3300.00	1.290	265.420	3298.17	11.44 N	94.66 W	60.35	0.077
	3500.00	0.970	272.240	3498.13	11.32 N	98.59 W	62.36	0.173
	3700.00	0.550	283.880	3698.12	11.62 N	101.22 W	64.01	0.223
	3900.00	0.720	294.810	3898.10	12.38 N	103.29 W	65.76	0.104
	4100.00	1.340	313.940	4098.07	14.53 N	106.11 W	69.09	0.350
	4300.00	2.170	316.860	4297.97	18.91 N	110.39 W	75.08	0.417
	4500.00	2.590	321.430	4497.80	25.21 N	115.79 W	83.30	0.230
	4700.00	2.660	351.770	4697.60	33.34 N	119.28 W	92.02	0.688
	4900.00	1.920	352.390	4897.44	41.25 N	120.38 W	99.30	0.370
MWD Leg#1 ST1								
	5300.00	0.490	334.540	5297.36	47.46 N	124.01 W	106.49	0.365
	5345.00	0.310	16.100	5342.36	47.75 N	124.06 W	106.76	0.733
	5352.00	3.800	324.400	5349.36	47.96 N	124.19 W	107.01	51.658
	5362.00	6.800	323.400	5359.31	48.70 N	124.74 W	107.93	30.013
	5372.00	10.100	322.400	5369.20	49.87 N	125.63 W	109.39	33.031
	5382.00	13.100	321.400	5379.00	51.45 N	126.87 W	111.39	30.066
	5392.00	16.200	320.400	5388.67	53.42 N	128.47 W	113.90	31.102
	5402.00	19.000	319.700	5398.20	55.73 N	130.41 W	116.90	28.079
	5412.00	22.000	320.300	5407.57	58.42 N	132.66 W	120.37	30.073
	5422.00	25.300	321.000	5416.73	61.52 N	135.20 W	124.35	33.119

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5432.00	28.900	321.200	5425.63	65.06 N	138.06 W	128.88	36.011
5442.00	32.100	319.600	5434.24	68.97 N	141.30 W	133.91	33.012
5452.00	35.200	317.800	5442.56	73.13 N	144.96 W	139.38	32.562
5462.00	38.400	315.900	5450.57	77.50 N	149.06 W	145.27	33.960
5472.00	41.300	314.300	5458.25	82.03 N	153.58 W	151.52	30.757
5482.00	43.100	312.500	5465.66	86.65 N	158.46 W	158.03	21.682
5492.00	44.600	312.300	5472.87	91.32 N	163.58 W	164.71	15.064
5502.00	46.600	313.000	5479.86	96.16 N	168.83 W	171.62	20.616
5512.00	49.200	313.800	5486.57	101.26 N	174.22 W	178.81	26.669
5522.00	52.900	313.900	5492.85	106.64 N	179.83 W	186.36	37.008
5532.00	56.800	314.000	5498.61	112.32 N	185.71 W	194.30	39.009
5542.00	60.700	314.100	5503.80	118.26 N	191.86 W	202.61	39.009
5552.00	66.500	314.200	5508.24	124.50 N	198.28 W	211.32	58.007
5562.00	72.500	314.200	5511.74	131.02 N	204.99 W	220.42	60.000
5572.00	79.000	314.300	5514.20	137.78 N	211.93 W	229.85	65.007
5585.00	81.300	314.500	5516.42	146.75 N	221.08 W	242.32	17.757
5604.01	79.000	315.300	5519.68	159.96 N	234.35 W	260.59	12.790
5635.75	79.200	318.000	5525.68	182.63 N	255.74 W	291.18	8.377
5667.48	77.400	318.000	5532.11	205.72 N	276.53 W	321.81	5.673
5699.26	77.500	317.500	5539.02	228.68 N	297.39 W	352.37	1.568
5731.06	80.200	317.800	5545.17	251.73 N	318.40 W	383.10	8.541
5762.87	83.500	318.700	5549.68	275.22 N	339.37 W	414.16	10.745
5794.62	84.600	318.700	5552.97	298.95 N	360.21 W	445.36	3.465
5826.46	84.000	318.500	5556.13	322.71 N	381.16 W	476.65	1.985
5858.16	81.600	320.400	5560.10	346.61 N	401.61 W	507.78	9.627
5889.91	80.800	321.700	5564.96	371.01 N	421.33 W	538.94	4.767
5921.56	79.700	322.000	5570.32	395.54 N	440.60 W	569.98	3.599
5953.38	81.800	323.300	5575.44	420.50 N	459.65 W	601.26	7.734
5985.20	82.400	324.700	5579.81	446.00 N	478.17 W	632.72	4.748
6017.06	82.900	326.400	5583.89	472.05 N	496.05 W	664.29	5.520
6048.84	83.700	328.700	5587.59	498.69 N	512.98 W	695.85	7.616
6080.69	83.900	330.800	5591.03	526.04 N	528.93 W	727.49	6.585
6112.48	83.000	332.700	5594.66	553.86 N	543.88 W	758.99	6.578
6126.00	83.100	333.800	5596.30	565.84 N	549.92 W	772.35	8.110
6158.00	84.450	335.400	5599.77	594.58 N	563.56 W	803.92	6.519

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 327.624° (True).
Coordinate System is UT-S. Grid Convergence at Surface is -4.170°.

Based Upon Minimum Curvature type calculations, at a Measured Depth of 6158.00ft.,
The Bottom Hole Displacement is 819.22ft., in the Direction of 316.534° (True).

sperry-sun
DRILLING SERVICES
A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
RU 14-32 - MWD Leg #2

SURVEY REPORT

9 June, 1997

Survey Ref: svy1767

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

	Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro								
	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
	100.00	0.170	336.190	100.00	0.14 N	0.06 W	-0.14	0.170
	300.00	0.150	347.130	300.00	0.66 N	0.24 W	-0.64	0.018
	500.00	0.390	301.460	500.00	1.27 N	0.88 W	-1.52	0.152
	700.00	1.160	276.860	699.98	1.87 N	3.47 W	-3.77	0.411
	900.00	1.810	282.340	899.91	2.79 N	8.56 W	-8.03	0.332
	1100.00	2.200	276.650	1099.79	3.91 N	15.46 W	-13.70	0.219
	1300.00	3.140	274.310	1299.57	4.76 N	24.74 W	-20.86	0.473
	1500.00	3.190	275.750	1499.26	5.73 N	35.74 W	-29.32	0.047
	1700.00	2.930	277.380	1698.98	6.95 N	46.34 W	-37.68	0.137
	1900.00	2.560	275.650	1898.75	8.04 N	55.86 W	-45.18	0.190
	2100.00	1.780	283.990	2098.60	9.23 N	63.31 W	-51.30	0.420
	2300.00	1.730	280.850	2298.51	10.55 N	69.29 W	-56.46	0.054
	2500.00	1.730	280.120	2498.42	11.65 N	75.23 W	-61.43	0.011
	2700.00	1.690	276.340	2698.33	12.51 N	81.13 W	-66.21	0.060
	2900.00	0.980	258.350	2898.27	12.49 N	85.74 W	-69.46	0.408
	3100.00	1.440	264.020	3098.23	11.88 N	89.91 W	-71.98	0.237
	3300.00	1.290	265.420	3298.17	11.44 N	94.66 W	-75.02	0.077
	3500.00	0.970	272.240	3498.13	11.32 N	98.59 W	-77.72	0.173
	3700.00	0.550	283.880	3698.12	11.62 N	101.22 W	-79.79	0.223
	3900.00	0.720	294.810	3898.10	12.38 N	103.29 W	-81.79	0.104
	4100.00	1.340	313.940	4098.07	14.53 N	106.11 W	-85.31	0.350
	4300.00	2.170	316.860	4297.97	18.91 N	110.39 W	-91.43	0.417
	4500.00	2.590	321.430	4497.80	25.21 N	115.79 W	-99.71	0.230
	4700.00	2.660	351.770	4697.60	33.34 N	119.28 W	-107.91	0.688
	4900.00	1.920	352.390	4897.44	41.25 N	120.38 W	-114.29	0.370
MWD Leg #2								
	5100.00	1.010	306.900	5097.38	45.63 N	122.24 W	-118.70	0.705
	5261.00	0.560	325.280	5258.36	47.13 N	123.82 W	-120.88	0.317
	5268.00	2.600	130.500	5265.36	47.05 N	123.72 W	-120.76	44.925
	5288.00	6.600	127.260	5285.29	46.06 N	122.46 W	-119.16	20.034
	5308.00	10.600	124.020	5305.06	44.34 N	120.02 W	-116.22	20.138
	5328.00	14.300	120.780	5324.59	42.04 N	116.37 W	-112.02	18.820
	5348.00	18.400	117.540	5343.78	39.32 N	111.45 W	-106.61	20.993
	5368.00	22.800	114.300	5362.50	36.26 N	105.11 W	-99.97	22.718
	5388.00	26.500	115.000	5380.67	32.78 N	97.53 W	-92.15	18.557
	5408.00	31.400	114.700	5398.17	28.72 N	88.75 W	-83.06	24.511

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5428.00	36.900	113.800	5414.71	24.11 N	78.52 W	-72.57	27.615
5448.00	42.500	115.300	5430.09	18.80 N	66.91 W	-60.60	28.405
5468.00	48.500	116.500	5444.10	12.56 N	54.08 W	-47.13	30.303
5488.00	53.200	121.600	5456.73	5.02 N	40.55 W	-32.22	30.701
5508.00	54.400	130.400	5468.56	4.46 S	27.52 W	-16.31	35.996
5528.00	56.600	135.400	5479.89	15.68 S	15.46 W	0.16	23.351
5548.00	60.400	132.700	5490.34	27.53 S	3.20 W	17.20	22.212
5568.00	63.600	131.300	5499.73	39.34 S	9.92 E	34.83	17.152
5588.00	66.500	130.700	5508.17	51.23 S	23.61 E	52.92	14.753
5608.00	71.500	131.200	5515.33	63.47 S	37.70 E	71.54	25.109
5628.00	77.700	131.800	5520.64	76.24 S	52.14 E	90.78	31.134
5648.00	84.900	133.800	5523.66	89.66 S	66.63 E	110.52	37.331
5671.00	91.200	133.200	5524.45	105.48 S	83.30 E	133.48	27.515
5691.05	91.900	134.600	5523.90	119.38 S	97.74 E	153.52	7.804
5722.87	93.800	135.200	5522.32	141.81 S	120.25 E	185.30	6.261
5754.69	93.600	135.700	5520.27	164.44 S	142.52 E	217.05	1.689
5785.86	93.000	135.500	5518.47	186.67 S	164.30 E	248.17	2.029
5817.64	93.800	136.600	5516.59	209.51 S	186.31 E	279.89	4.275
5849.46	92.100	135.900	5514.95	232.46 S	208.29 E	311.66	5.777
5880.10	90.900	135.700	5514.15	254.42 S	229.64 E	342.28	3.970
5911.85	91.700	136.000	5513.43	277.20 S	251.75 E	374.02	2.691
5943.65	92.800	136.000	5512.18	300.05 S	273.82 E	405.79	3.459
5975.38	93.700	136.200	5510.38	322.88 S	295.79 E	437.46	2.905
6007.21	94.500	136.400	5508.11	345.83 S	317.72 E	469.20	2.590
6038.95	94.600	136.600	5505.59	368.78 S	339.50 E	500.83	0.703
6070.81	95.500	136.400	5502.78	391.80 S	361.35 E	532.56	2.893
6102.53	95.900	136.900	5499.63	414.76 S	383.02 E	564.11	2.013
6134.35	96.000	137.500	5496.33	437.98 S	404.52 E	595.73	1.902
6166.13	92.500	136.800	5493.98	461.21 S	426.07 E	627.40	11.230
6197.96	90.100	136.400	5493.26	484.33 S	447.93 E	659.21	7.644
6228.88	92.200	135.500	5492.64	506.54 S	469.42 E	690.11	7.389
6260.71	93.800	135.000	5490.97	529.12 S	491.80 E	721.90	5.266
6292.72	94.200	133.400	5488.74	551.38 S	514.69 E	753.83	5.140
6324.47	95.300	133.400	5486.11	573.12 S	537.68 E	785.45	3.465
6356.26	96.600	133.400	5482.81	594.84 S	560.65 E	817.06	4.089
6387.98	96.800	133.600	5479.11	616.53 S	583.51 E	848.55	0.889
6419.78	95.300	133.400	5475.76	638.30 S	606.44 E	880.16	4.758
6451.66	94.400	133.100	5473.07	660.06 S	629.58 E	911.91	2.975
6482.56	95.800	132.900	5470.32	681.05 S	652.09 E	942.67	4.576
6514.30	96.900	132.200	5466.81	702.38 S	675.33 E	974.19	4.101
6546.05	97.600	131.800	5462.80	723.46 S	698.73 E	1005.64	2.534
6577.77	97.100	130.800	5458.74	744.22 S	722.37 E	1037.03	3.502
6609.59	96.200	129.700	5455.06	764.64 S	746.49 E	1068.53	4.449
6641.26	94.600	128.100	5452.08	784.44 S	771.03 E	1099.88	7.129
6673.03	93.600	127.800	5449.81	803.93 S	796.01 E	1131.33	3.286

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 14-32

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6704.21	92.400	127.800	5448.18	823.01 S	820.62 E	1162.22	3.849
6736.00	91.100	127.600	5447.20	842.44 S	845.76 E	1193.74	4.137
6767.80	91.300	127.800	5446.54	861.88 S	870.91 E	1225.27	0.889
6799.61	90.400	127.600	5446.07	881.33 S	896.08 E	1256.82	2.898
6831.38	93.600	126.000	5444.96	900.35 S	921.50 E	1288.24	11.260
6859.00	93.100	123.900	5443.34	916.14 S	944.10 E	1315.39	7.803
6891.00	93.100	123.900	5441.61	933.97 S	970.62 E	1346.74	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 135.000° (True).
Coordinate System is UT-S. Grid Convergence at Surface is -4.170°.

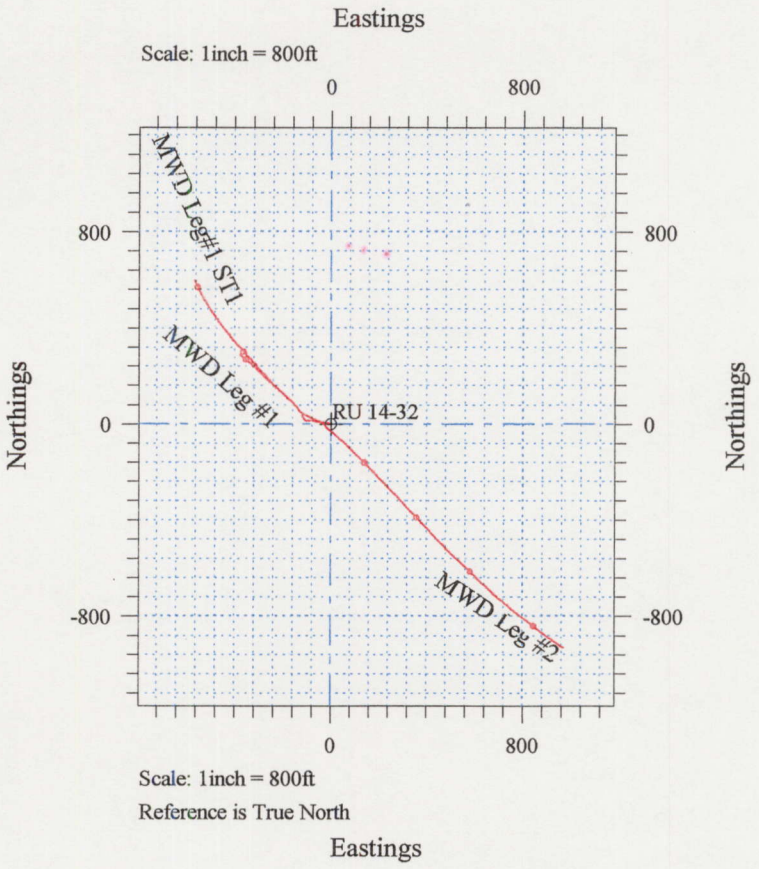
Based Upon Minimum Curvature type calculations, at a Measured Depth of 6891.00ft.,
The Bottom Hole Displacement is 1346.99ft., in the Direction of 133.897° (True).

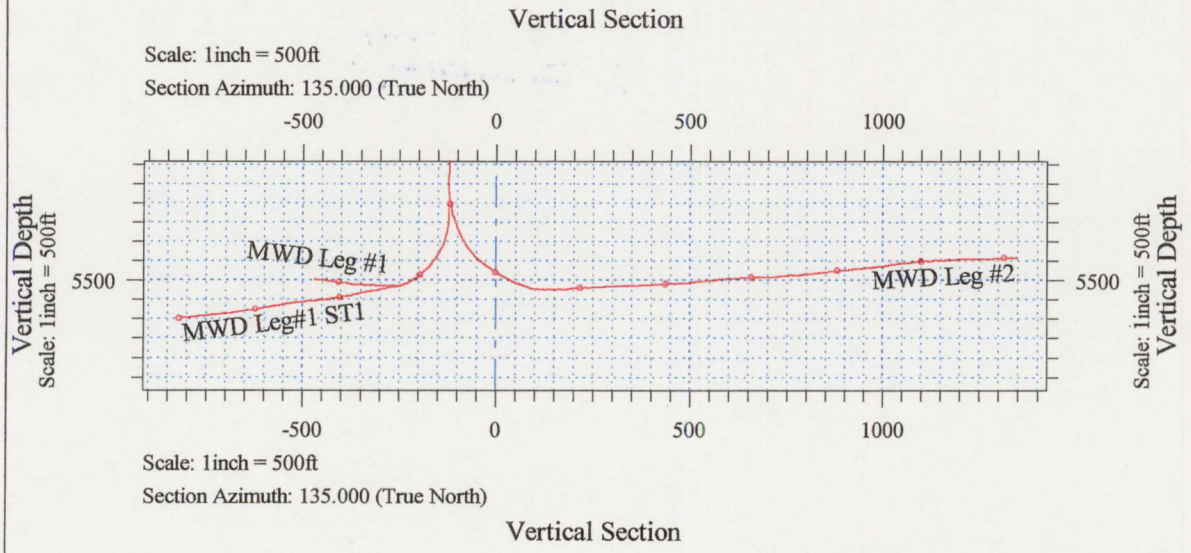
sperry-sun DRILLING SERVICES
A HALLIBURTON INDUSTRIES, INC. COMPANY

Well: RU 14-32

DrillQuest

Customer: Mobil
Folder: Mobil
Field: San Juan County
Project: Utah
Structure: Ratherford Unit
Well: RU 14-32





Prepared:	Checked:	Approved:

ExxonMobil Production Compa
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

June 27, 2001

ExxonMobil
Production

Mr. Jim Thompson
State of Utah, Division of Oil, Gas and Mining
1549 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Change of Name – Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Mr. Thompson

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

A copy of the Certification, Bond Rider and a list of wells are attached.

If you have any questions please feel free to call Joel Talavera at 713-431-1010

Very truly yours,
Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
~~Navajo Area Office~~
NAVAJO REGION
P.O. Box 1060
Gallup, New Mexico 87305-1060

IN REPLY REFER TO:

RRES/543

AUG 30 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Charlotte H. Harper, Permitting Supervisor
Exxon Mobil Production Company
U. S. West
P. O. Box 4358
Houston, TX 77210-4358

Dear Ms. Harper:

This is to acknowledge receipt of your company's name change from Mobil Oil Corporation to ExxonMobil Oil Corporation effective June 1, 2001. The receipt of documents includes the Name Change Certification, current listing of Officers and Directors, Listing of Leases, Financial Statement, filing fees of $75.00 and a copy of the Rider for Bond Number 8027 31 97. There are no other changes.

Please note that we will provide copies of these documents to other concerned parties. If you need further assistance, you may contact Ms. Bertha Spencer, Realty Specialist, at (928) 871-5938.

Sincerely,

PENNI DENETSONE

Regional Realty Officer

cc: BLM, Farmington Field Office w/enclosures
Navajo Nation Minerals Office, Attn: Mr. Akhtar Zaman, Director/w enclosures

MINERAL RESOURCES
ADM BLM
NATV AM MIN COORD
SOLID MIN TEAM
PETRO MGMT TEAM
O & G INSPECT TEAM
ALL TEAM LEADERS
LAND RESOURCES
ENVIRONMENT
FILES

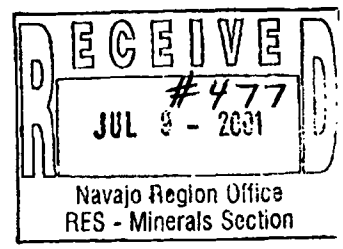
ExxonMobil Production Company
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

BR 7/12/2001 GN 543 File

June 27, 2001

ExxonMobil Production

Certified Mail
Return Receipt Requested



Ms. Genni Denetsone
United States Department of the Interior
Bureau of Indian Affairs, Navajo Region
Real Estate Services
P. O. Box 1060
Gallup, New Mexico 87305-1060
Mail Code 543

Change of Name –
Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Ms. Denetsone:

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

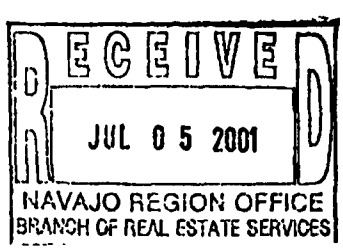
Attached is the Name Change Certification, Current listing of Officers and Directors, Filing Fee of $75/-, Listing of Leases, Financial Statement and a copy of the Rider for Bond number 8027 31 97. The original Bond Rider has been sent to Ms. Barbar Davis at your Washington Office.

If you have any questions , please contact Alex Correa at (713) 431-1012.

Very truly yours,

Charlotte H. Harper
Permitting Supervisor

Attachments



ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

NOTE: Check forwarded to Ella Isaac

Bureau of Indian Affairs
Navajo Region Office
Attn: RRES - Mineral and Mining Section
P.O. Box 1060
Gallup, New Mexico 87305-1060

Gentlemen:

The current listing of officers and director of ExxonMobil Oil Corporation (Name of Corporation), of New York (State) is as follows:

OFFICERS

President	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039
Vice President	K.T. Koonce	Address	800 Bell Street Houston, TX 77002
Secretary	F.L. Reid	Address	5959 Las Colinas Blvd. Irving, TX 75039
Treasure	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039

DIRECTORS

Name	D.D. Humphreys	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	P.A. Hanson	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	T.P. Townsend	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039

Sincerely,

Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is trust and correct as evidenced by the records and accounts covering business for the State of Utah and in the custody of Corporation Service Company (Agent), Phone: 1 (800) 927-9800, whose business address is One Utah Center, 201 South Main Street, Salt Lake City, Utah 84111-2218

(CORPORATE SEAL)

Signature

AGENT AND ATTORNEY IN FACT

Title

SAL

CERTIFICATION

I, the undersigned Assistant Secretary of ExxonMobil Oil Corporation. (formerly Mobil Oil Corporation), a corporation organized and existing under the laws of the State of New York, United States of America, DO HEREBY CERTIFY, That, the following is a true and exact copy of the resolutions adopted by the Board of Directors on May 22, 2001:

CHANGE OF COMPANY NAME

WHEREAS, the undersigned Directors of the Corporation deem it to be in the best interest of the Corporation to amend the Certificate of Incorporation of the Corporation to change the name and principal office of the Corporation:

NOW THEREFORE BE IT RESOLVED, That Article 1st relating to the corporate name is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

FURTHER RESOLVED, That the amendment of the Corporation's Certificate of Incorporation referred to in the preceding resolutions be submitted to the sole shareholder of the Corporation entitled to vote thereon for its approval and, if such shareholder gives its written consent, pursuant to Section 803 of the Business Corporation Law of the State of New York, approving such amendment, the proper officers of the Corporation be, and they hereby are, authorized to execute in the name of the Corporation the Certificate of Amendment of Certificate of Incorporation, in the form attached hereto;

FURTHER RESOLVED, That the proper officers of the Corporation be and they hereby are authorized and directed to deliver, file and record in its behalf, the Certificate of Amendment of Certificate of Incorporation, and to take such action as may be deemed necessary or advisable to confirm and make effective in all respects the change of this Company's name to EXXONMOBIL OIL CORPORATION.

WITNESS, my hand and the seal of the Corporation at Irving, Texas, this 8th day of June, 2001.

S. A. Millican
Assistant Secretary

COUNTY OF DALLAS)
STATE OF TEXAS)
UNITED STATES OF AMERICA)
Sworn to and subscribed before me at Irving, Texas, U. S. A. on this the 8th day of June, 2001.

Janice M. Phillips
Notary Public

LISTING OF LEASES OF MOBIL OIL CORPORATION

	Lease Number
1)	14-20-0603-6504
2)	14-20-0603-6505
3)	14-20-0603-6506
4)	14-20-0603-6508
5)	14-20-0603-6509
6)	14-20-0603-6510
7)	14-20-0603-7171
8)	14-20-0603-7172A
9)	14-20-600-3530
10)	14-20-603-359
11)	14-20-603-368
12)	14-20-603-370
13)	14-20-603-370A
14)	14-20-603-372
15)	14-20-603-372A
16)	14-20-603-4495
17)	14-20-603-5447
18)	14-20-603-5448
19)	14-20-603-5449
20)	14-20-603-5450
21)	14-20-603-5451

6/1/01

CHUBB GROUP OF INSURANCE COMPANIES

[illegible] South, Suite 1900, Houston, Texas 77027-3301
[illegible] 713 297-4600 • Facsimile (713) 297-4750

NW Bond

FEDERAL INSURANCE COMPANY RIDER
to be attached to and form a part of

BOND NO 8027 31 97
wherein
Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc. is named as Principal and

FEDERAL INSURANCE COMPANY AS SURETY,

in favor of United States of America, Department of the Interior Bureau of Indian Affairs

in the amount of **$150,000.00**
bond date: 11/01/65

IT IS HEREBY UNDERSTOOD AND AGREED THAT effective **June 1, 2001** the name of the Principal is changed

FROM: **Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc.**

TO : **ExxonMobil Oil Corporation**

All other terms and conditions of this Bond are unchanged.

Signed, sealed and dated this 12th of June, 2001.

ExxonMobil Oil Corporation
By :

FEDERAL INSURANCE COMPANY
By: Mary Pierson
Mary Pierson, Attorney-in-fact

Chubb Surety	POWER OF ATTORNEY	Federal Insurance Company Vigilant Insurance Company Pacific Indemnity Company	Attn.: Surety Department 15 Mountain View Road Warren, NJ 07059

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint R.F. Bobo, Mary Pierson, Philana Berros, and Jody E. Specht of Houston, Texas----------

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 10th day of May, 2001.

Kenneth C. Wendel, Assistant Secretary

Frank E. Robertson, Vice President

STATE OF NEW JERSEY }
County of Somerset } ss.

On this 10th day of May, 2001, before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with Frank E. Robertson, and knows him to be Vice President of said Companies; and that the signature of Frank E. Robertson, subscribed to said Power of Attorney is in the genuine handwriting of Frank E. Robertson, and was thereto subscribed by authority of said Boards and in deponent's presence.

Karen A. Price
Notary Public State of New Jersey
No. 2231647
Commission Expires Oct. 28, 2004

Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By-Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U. S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U. S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 12th day of June, 2001.

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY
Telephone (908) 903-3485 Fax (908) 903-3656 e-mail: surety@chubb.com

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

MOBIL OIL CORPORATION

(Under Section 805 of the Business Corporation Law)

Pursuant to the provisions of Section 805 of the Business Corporation Law, the undersigned President and Secretary, respectively, of Mobil Oil Corporation hereby certify:

FIRST: That the name of the corporation is MOBIL OIL CORPORATION and that said corporation was incorporated under the name of Standard Oil Company of New York.

SECOND: That the Certificate of Incorporation of the corporation was filed by the Department of State, Albany, New York, on the 10th day of August, 1882.

THIRD: That the amendments to the Certificate of Incorporation effected by this Certificate are as follows:

(a) Article 1st of the Certificate of Incorporation, relating to the corporate name, is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

(b) Article 7th of the Certificate of Incorporation, relating to the office of the corporation is hereby amended to read as follows:

The office of the corporation within the State of New York is to be located in the County of Albany. The Company shall have offices at such other places as the Board of Directors may from time to time determine.

FOURTH: That the amendments to the Certificate of Incorporation were authorized by the Board of Directors followed by the holder of all outstanding shares entitled to vote on amendments to the Certificate of Incorporation by written consent of the sole shareholder dated May 22, 2001.

IN WITNESS WHEREOF, this Certificate has been signed this 22nd Day of May, 2001.

F. A. Risch, President

STATE OF TEXAS)
COUNTY OF DALLAS)

F. L. REID, being duly sworn, deposes and says that he is the Secretary of MOBIL OIL CORPORATION, the corporation mentioned and described in the foregoing instrument; that he has read and signed the same and that the statements contained therein are true.

F. L. REID, Secretary

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on this the 22nd day of May, 2001.

[SEAL]

NOTARY PUBLIC, STATE OF TEXAS

JANICE M. PHILLIPS
MY COMMISSION EXPIRES
May 16, 2002

CSC
CSC

5184334741

06/01 '01 09:01 NO.411 02/02
06/01 '01 09:06 NO.153 04/04

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

MOBIL OIL CORPORATION

Under Section 805 of the Business Corporation Law

SRC

100 cc

STATE OF NEW YORK
DEPARTMENT OF STATE
FILED JUN 01 2001
TAX $
BY: SRC

Filed by: EXXONMOBIL CORPORATION
(Name)

5959 Las Colinas Blvd.
(Mailing address)

Irving, TX 75039-2298
(City, State and Zip code)

Cust Ref # 165578MPT

RECEIVED
JUL 05 2001
REVENUE ACCOUNTING
CORPORATE TAX & REAL ESTATE SERVICES

010601000195

=> CSC ,TEL=5184334741 06/01'01 08:19

State of New York }
Department of State } ss:

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

Witness my hand and seal of the Department of State on JUN 01 2001

STATE OF NEW YORK ★ DEPARTMENT OF STATE ★

Special Deputy Secretary of State

DOS-1266 (7/00)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW✓
3. FILE

Change of Operator (Well Sold) — Designation of Agent

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **06-01-2001**

FROM: (Old Operator):		**TO:** (New Operator):
MOBIL EXPLORATION & PRODUCTION		EXXONMOBIL OIL CORPORATION
Address: P O BOX DRAWER "G"		Address: U S WEST P O BOX 4358
CORTEZ, CO 81321		HOUSTON, TX 77210-4358
Phone: 1-(970)-564-5212		Phone: 1-(713)-431-1010
Account No. N7370		Account No. N1855

CA No. **Unit:** **RATHERFORD**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
RATHERFORD UNIT 1-34	01-41S-23E	43-037-16385	6280	INDIAN	OW	P
RATHERFORD UNIT 1-14	01-41S-23E	43-037-31162	6280	INDIAN	OW	P
RATHERFORD 11-41	11-41S-23E	43-037-31544	6280	INDIAN	OW	P
RATHERFORD UNIT 11-43	11-41S-23E	43-037-31622	6280	INDIAN	OW	P
12-14	12-41S-23E	43-037-15844	6280	INDIAN	OW	P
RATHERFORD UNIT 12-23 (MULTI-LEG)	12-41S-23E	43-037-15846	6280	INDIAN	OW	P
RATHERFORD UNIT 12-34	12-41S-23E	43-037-31126	6280	INDIAN	OW	P
RATHERFORD UNIT 12-12	12-41S-23E	43-037-31190	6280	INDIAN	OW	P
RATHERFORD UNIT 12-21	12-41S-23E	43-037-31201	6280	INDIAN	OW	P
RATHERFORD UNIT 12-43	12-41S-23E	43-037-31202	6280	INDIAN	OW	P
RATHERFORD UNIT 12-32	12-41S-23E	43-037-31203	6280	INDIAN	OW	P
RATHERFORD UNIT 13-41	13-41S-23E	43-037-15856	6280	INDIAN	OW	P
N DESERT CR 32-13 (13-32)	13-41S-23E	43-037-16406	6280	INDIAN	OW	S
RATHERFORD UNIT 13-12	13-41S-23E	43-037-31127	6280	INDIAN	OW	P
RATHERFORD UNIT 13-21	13-41S-23E	43-037-31128	6280	INDIAN	OW	P
RATHERFORD UNIT 13-23	13-41S-23E	43-037-31129	6280	INDIAN	OW	P
RATHERFORD UNIT 13-34 (RE-ENTRY)	13-41S-23E	43-037-31130	6280	INDIAN	OW	P
RATHERFORD UNIT 13-43	13-41S-23E	43-037-31131	6280	INDIAN	OW	P
RATHERFORD UNIT 13-14	13-41S-23E	43-037-31589	6280	INDIAN	OW	P
14-32	14-41S-23E	43-037-15858	6280	INDIAN	OW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/29/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 06/29/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 04/09/2002
4. Is the new operator registered in the State of Utah: YES Business Number: 579865-0143
5. If **NO**, the operator was contacted contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BIA-06/01/01

7. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 06/01/2001

8. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 04/12/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 04/12/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: N/A

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: 80273197

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A

2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. DJJ
2. CDW

X Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **6/1/2006**

FROM: (Old Operator):	**TO:** (New Operator):
N1855-ExxonMobil Oil Corporation	N2700-Resolute Natural Resources Company
PO Box 4358	1675 Broadway, Suite 1950
Houston, TX 77210-4358	Denver, CO 80202
Phone: 1 (281) 654-1936	Phone: 1 (303) 534-4600

CA No. **Unit:** **RATHERFORD**

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 6/7/2006
4. Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
5. If **NO**, the operator was contacted contacted on:

6a. (R649-9-2)Waste Management Plan has been received on: requested

6b. Inspections of LA PA state/fee well sites complete on: n/a

6c. Reports current for Production/Disposition & Sundries on: ok

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM n/a BIA not yet
8. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
9. **Federal and Indian Communization Agreements ("CA"):** The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/12/2006

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/22/2006
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/22/2006
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: 6/22/2006
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: n/a
2. Indian well(s) covered by Bond Number: PA002769
3. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a

a. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:	See attached list
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	Navajo Tribe
7. UNIT or CA AGREEMENT NAME:	Ratherford Unit
8. WELL NAME and NUMBER:	See attached list
9. API NUMBER:	Attached
10. FIELD AND POOL, OR WILDCAT:	Greater Aneth

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Unit Agreement

2. NAME OF OPERATOR: Resolute Natural Resources Company N2700

3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1950 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 534-4600

4. LOCATION OF WELL
FOOTAGES AT SURFACE: See attached list COUNTY: San Juan
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
_____	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective June 1, 2006 Exxon Mobil Oil Corporation resigns as operator of the Ratherford Unit. Also effective June 1, 2006 Resolute Natural Resources Company is designated as successor operator of the Ratherford Unit.

A list of affected producing and water source wells is attached. A separate of affected injection wells is being submitted with UIC Form 5, Transfer of Authority to Inject.

As of the effective date, bond coverage for the affected wells will transfer to BIA Bond # PA002769.

NAME (PLEASE PRINT) Dwight E Mallory TITLE Regulatory Coordinator

SIGNATURE Dwight E Mallory DATE 4/20/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ship Rock

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: UTU68931A

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Ratherford

2. NAME OF OPERATOR: ExxonMobil Oil Corporation N1855

9. API NUMBER: attached

3. ADDRESS OF OPERATOR: P.O. Box 4358 CITY Houston STATE TX ZIP 77210-4358

PHONE NUMBER: (281) 654-1936

10. FIELD AND POOL, OR WILDCAT: Aneth

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/1/2006	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
Date of work completion:	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

ExxonMobil Oil Corporation is transferring operatorship of Greater Aneth field, Ratherford lease to Resolute Natural Resources Company. All change of operator notices should be made effective as of 7:00 AM MST on June 1, 2006.

Attached please find a listing of producers and water source wells included in the transfer.

NAME (PLEASE PRINT) Laurie Kilbride TITLE Permitting Supervisor

SIGNATURE Laurie B. Kilbride DATE 4/19/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

RECEIVED
APR 21 2006
DIV. OF OIL, GAS & MINING

(5/2000)

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	01-14	430373116200S1	Producing	1420603246A	1	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	01-34	430371638501S1	SI	1420603246A	1	41S	23E	SWSE	1133FSL	1980FEL
Ratherford	11-41	430373154400S1	Producing	1420603246A	11	41S	23E	NENE	0860FNL	0350FEL
Ratherford	11-43	430373162201S1	Producing	1420603246A	11	41S	23E	NESE	1980FSL	0660FEL
Ratherford	12-12	430373119000S1	Producing	1420603246A	12	41S	23E	SWNW	1850FNL	0660FWL
Ratherford	12-14	430371584400S1	SI	1420603246A	12	41S	23E	SWSW	0660FSL	4622FEL
Ratherford	12-21	430373120100S1	Producing	1420603246A	12	41S	23E	NENW	0660FNL	1980FWL
Ratherford	12-23	430371584601S1	Producing	1420603246A	12	41S	23E	NESW	1958FSL	3300FEL
Ratherford	12-32	430373120300S1	Producing	1420603246A	12	41S	23E	SWNE	1820FNL	1820FEL
Ratherford	12-34	430373112600S1	Producing	1420603246A	12	41S	23E	SWSE	0675FSL	1905FEL
Ratherford	12-43	430373120200S1	SI	1420603246A	12	41S	23E	NESE	2100FSL	0660FEL
Ratherford	13-12	430373112701S1	Producing	1420603247A	13	41S	23E	SWNW	1705FNL	0640FWL
Ratherford	13-14	430373158900S1	Producing	1420603247A	13	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	13-21	430373112801S1	SI	1420603247A	13	41S	23E	NENW	0660FNL	1920FWL
Ratherford	13-23	430373112900S1	Producing	1420603247A	13	41S	23E	NESW	1980FSL	1930FWL
Ratherford	13-34	430373113001S1	Producing	1420603247A	13	41S	23E	SWSE	0660FSL	1980FEL
Ratherford	13-41	430371585601S1	Producing	1420603247A	13	41S	23E	NENE	660FNL	660FEL
Ratherford	13-43	430373113100S1	Producing	1420603247A	13	41S	23E	NESE	1700FSL	0960FEL
Ratherford	14-32	430371585801S1	Producing	1420603247A	14	41S	23E	SWNE	2130FNL	1830FEL
Ratherford	14-41	430373162300S1	Producing	1420603247A	14	41S	23E	NENE	0521FNL	0810FEL
Ratherford	24-32	430373159300S1	Producing	1420603247A	24	41S	23E	SWNE	2121FNL	1846FEL
Ratherford	24-41	430373113200S1	Producing	1420603247A	24	41S	23E	NENE	0660FNL	0710FEL
Ratherford	17-11	430373116900S1	Producing	1420603353	17	41S	24E	NWNW	1075FNL	0800FWL
Ratherford	17-13	430373113301S1	Producing	1420603353	17	41S	24E	NWSW	2100FSL	0660FWL
Ratherford	17-22	430373117001S1	Producing	1420603353	17	41S	24E	SENW	1882FNL	1910FWL
Ratherford	17-24	430373104400S1	Producing	1420603353	17	41S	24E	SESW	0720FSL	1980FWL
Ratherford	17-31	430373117800S1	Producing	1420603353	17	41S	24E	NWNE	0500FNL	1980FEL
Ratherford	17-33	430373113400S1	Producing	1420603353	17	41S	24E	NWSE	1980FSL	1845FEL
Ratherford	17-42	430373117700S1	Producing	1420603353	17	41S	24E	SENE	1980FNL	0660FEL
Ratherford	17-44	430371573201S1	Producing	1420603353	17	41S	24E	SESE	0660FSL	0660FEL
Ratherford	18-11	430371573300S1	SI	1420603353	18	41S	24E	NWNW	0720FNL	0730FWL
Ratherford	18-13	430371573401S1	Producing	1420603353	18	41S	24E	NWSW	1980FSL	0500FWL
Ratherford	18-22	430373123600S1	Producing	1420603353	18	41S	24E	SENW	2200FNL	2210FWL
Ratherford	18-24	430373107900S1	Producing	1420603353	18	41S	24E	SESW	0760FSL	1980FWL
Ratherford	18-31	430373118101S1	Producing	1420603353	18	41S	24E	NWNE	0795FNL	2090FEL
Ratherford	18-33	430373113501S1	Producing	1420603353	18	41S	24E	NWSE	1870FSL	1980FEL
Ratherford	18-42	430373118200S1	Producing	1420603353	18	41S	24E	SENE	2120FNL	0745FEL
Ratherford	18-44	430373104500S1	SI	1420603353	18	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-11	430373108000S1	Producing	1420603353	19	41S	24E	NWNW	0660FNL	0660FWL
Ratherford	19-13	430373171900S1	Producing	1420603353	19	41S	24E	NWSW	1980FSL	0660FWL
Ratherford	19-22	430373104601S1	Producing	1420603353	19	41S	24E	SENW	1840FNL	1980FWL
Ratherford	19-24	430373175401S1	Producing	1420603353	19	41S	24E	SESW	0600FSL	1980FWL
Ratherford	19-31	430373104701S1	Producing	1420603353	19	41S	24E	NWNE	510FNL	1980FEL
Ratherford	19-33	430373104800S1	Producing	1420603353	19	41S	24E	NWSE	1980FSL	1980FEL
Ratherford	19-42	430373091600S1	Producing	1420603353	19	41S	24E	SENE	1880FNL	0660FEL
Ratherford	19-44	430373108100S1	Producing	1420603353	19	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-97	430373159600S1	Producing	1420603353	19	41S	24E	SENE	2562FNL	0030FEL
Ratherford	20-11	430373104900S1	Producing	1420603353	20	41S	24E	NWNW	0500FNL	0660FWL
Ratherford	20-13	430373091700S1	Producing	1420603353	20	41S	24E	NWSW	2140FSL	0500FWL
Ratherford	20-22	430373093000S1	Producing	1420603353	20	41S	24E	SENW	2020FNL	2090FWL
Ratherford	20-24	430373091800S1	Producing	1420603353	20	41S	24E	SESW	0820FSL	1820FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	20-31	430373105001S1	Producing	1420603353	20	41S	24E	NWNE	0660FNL	1880FEL
Ratherford	20-33	430373093100S1	Producing	1420603353	20	41S	24E	NWSE	1910FSL	2140FEL
Ratherford	20-42	430373105100S1	Producing	1420603353	20	41S	24E	SENE	1980FNL	0660FEL
Ratherford	20-44	430373091501S1	Producing	1420603353	20	41S	24E	SESE	0620FSL	0760FEL
Ratherford	20-66	430373159201S1	Producing	1420603353	20	41S	24E	SWNW	1369FNL	1221FWL
Ratherford	20-68	430373159100S1	Producing	1420603353	20	41S	24E	NWSW	1615FSL	1276FWL
Ratherford	15-12	430371571501S1	Producing	1420603355	15	41S	24E	SWNW	1820FNL	0500FWL
Ratherford	15-22	430373044900S1	SI	1420603355	15	41S	24E	SENW	1980FNL	2050FWL
Ratherford	15-32	430371571700S1	Producing	1420603355	15	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	15-33	430371571800S1	Producing	1420603355	15	41S	24E	NWSE	1650FSL	1980FEL
Ratherford	15-41	430371571900S1	TA	1420603355	15	41S	24E	NENE	0660FNL	0660FEL
Ratherford	15-42	430373044800S1	Producing	1420603355	15	41S	24E	SENE	2020FNL	0820FEL
Ratherford	16-13	430373116801S1	Producing	1420603355	16	41S	24E	NWSW	1980FSL	660FWL
Ratherford	16-32	430371572300S1	Producing	1420603355	16	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	16-41	430371572500S1	Producing	1420603355	16	41S	24E	NENE	0660FNL	0660FEL
Ratherford	16-77	430373176800S1	Producing	1420603355	16	41S	24E	NESW	2587FSL	2410FWL
Ratherford	21-23	430371375400S1	Producing	1420603355	21	41S	24E	NESW	1740FSL	1740FWL
Ratherford	21-24	430373172001S1	SI	1420603355	21	41S	24E	SESW	487FSL	2064FWL
Ratherford	21-32	430371575500S1	SI	1420603355	21	41S	24E	SWNE	1880FNL	1980FEL
Ratherford	21-77	430373175801S1	SI	1420603355	21	41S	24E	NWSE	2511FSL	2446FEL
Ratherford	07-11	430373116300S1	Producing	1420603368	7	41S	24E	NWNW	0660FNL	0710FWL
Ratherford	07-13	430373116400S1	Producing	1420603368	7	41S	24E	NWSW	2110FSL	0740FWL
Ratherford	07-22	430373116500S1	Producing	1420603368	7	41S	24E	SENW	1980FNL	1980FWL
Ratherford	07-24	430373116600S1	Producing	1420603368	7	41S	24E	SESW	0880FSL	2414FWL
Ratherford	07-44	430373118900S1	SI	1420603368	7	41S	24E	SESE	0737FSL	0555FEL
Ratherford	08-12	430371599100S1	Producing	1420603368	8	41S	24E	SWNW	1909FNL	0520FWL
Ratherford	08-21	430371599300S1	Producing	1420603368	8	41S	24E	NENW	0616FNL	1911FWL
Ratherford	08-23	430371599400S1	Producing	1420603368	8	41S	24E	NESW	1920FSL	2055FWL
Ratherford	08-32	430371599500S1	Producing	1420603368	8	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	08-34	430371599600S1	Producing	1420603368	8	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	04-34	430371616400S1	Producing	14206034035	4	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	11-14	430371616700S1	Producing	14206034037	11	41S	24E	SWSW	0660FSL	0660FWL
Ratherford	09-34	430371571100S1	SI	14206034043	9	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	10-12	430371571200S1	Producing	14206034043	10	41S	24E	SWNW	1980FNL	0660FWL
Ratherford	10-14	430371571300S1	Producing	14206034043	10	41S	24E	SWSW	0510FSL	0710FWL
Ratherford	10-32	430371571400S1	TA	14206034043	10	41S	24E	SWNE	2080FNL	1910FEL
Ratherford	10-44	430373045100S1	TA	14206034043	10	41S	24E	SESE	0820FSL	0510FEL
Ratherford	29-11	430373105300S1	Producing	1420603407	29	41S	24E	NWNW	0770FNL	0585FWL
Ratherford	29-22	430373108200S1	Producing	1420603407	29	41S	24E	SENW	2130FNL	1370FWL
Ratherford	29-31	430373091401S1	Producing	1420603407	29	41S	24E	NWNE	0700FNL	2140FEL
Ratherford	29-33	430373093200S1	SI	1420603407	29	41S	24E	NWSE	1860FSL	1820FEL
Ratherford	29-34	430371534000S1	SI	1420603407	29	41S	24E	SWSE	0817FSL	2096FEL
Ratherford	29-42	430373093700S1	SI	1420603407	29	41S	24E	SENE	1850FNL	0660FEL
Ratherford	30-32	430371534200S1	Producing	1420603407	30	41S	24E	SWNE	1975FNL	2010FEL
Ratherford	28-11	430373044600S1	Producing	1420603409	28	41S	24E	NWNW	0520FNL	0620FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	09-12	430371512600S1	Producing	14206035045	9	41S	24E	SWNW	1865FNL	0780FWL
Ratherford	09-14	430371512700S1	Producing	14206035046	9	41S	24E	SWSW	0695FSL	0695FWL
Ratherford	04-14	430371616300S1	Producing	14206035446	4	41S	24E	SWSW	0500FSL	0660FWL
Ratherford	03-12	430371562000S1	Producing	14206036506	3	41S	24E	SWNW	2140FNL	0660FWL

Water Source Wells (Feb 2006)

RU	S1	4303700001	Active
RU	S2	4303700002	Active
RU	S3	4303700003	Active
RU	S4	4303700004	Active
RU	S5	4303700005	Active
RU	S6	4303700006	Active
RU	S7	4303700007	Active
RU	S8	4303700008	Active
RU	S9	4303700009	Active
RU	S10	4303700010	Active
RU	S11	4303700011	Active
RU	S12	4303700012	Active
RU	S13	4303700013	Active
RU	S14	4303700014	Active
RU	S16	4303700016	Active
RU	S17	4303700017	Active